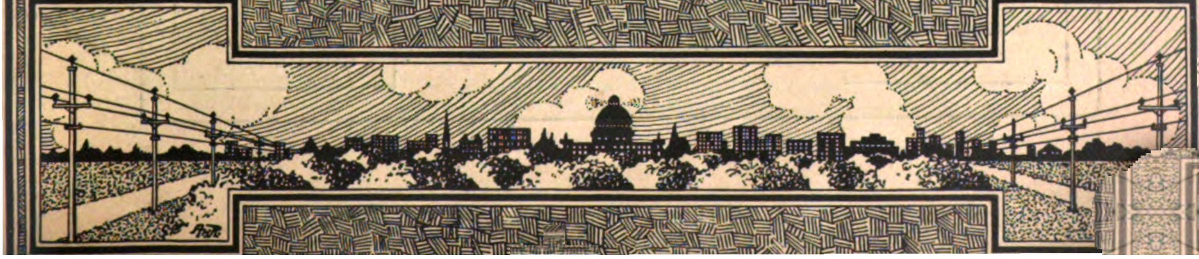
The SAN JOAQUIN LIGHT & POWER MAGAZINE

FOR CONSUMERS AND EMPLOYEES

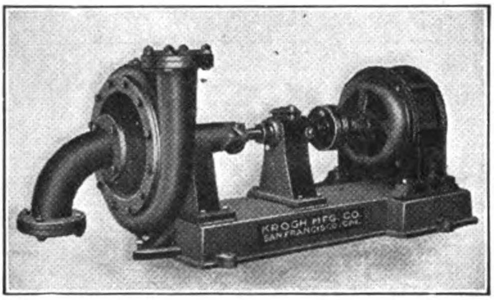
Published monthly by the
San Joaquin Light & Power Co

View on North Fork Road

Vol. I October, 1913 No. 10



Careful Irrigationists are Investigating Our New Water Balanced Pump—Then Buying It



Krogh Motor Driven Pump

Krogh Pumps

mean more water with less power. They are fitted with Ring Oiling Bearings. Removable Bushings. They give the most satisfaction with the least attention.

Write for Descriptive Catalogue—Do It Now

Krogh Manufacturing Co.
147-59 Beale St., San Francisco
Branch Sales Office at Los Angeles

FIRST NATIONAL BANK
TAFT
COMMERCIAL

FIRST NATIONAL BANK
MARICOPA
COMMERCIAL

The Strength—The Facilities

FIRST NATIONAL BANK
BAKERSFIELD
COMMERCIAL

The Ability to Serve

PRODUCERS SAVINGS BANK
BAKERSFIELD
SAVINGS

Make Our Banks Your Banks

BANK OF WASCO
WASCO
COMMERCIAL

San Joaquin Light and Power Magazine

CONTENTS FOR OCTOBER

View at Valley Ice Plant, Fresno .... Frontispiece

Plants of the Valley Ice Company 427

The Story of Emerson .... Herbert N. Casson 434

Electricity in Oil Well Drilling .... Willard C. Johnson 442

Service .... A. M. Frost 445

Recollections of First Horseless Carriage ...... C. B. Turpin 450

Helps to Operation of Pumping Plants .... C. L. Easton 453

S. J. L. & P. Exhibit at the District Fair 455

1913 Fresno District Fair 456

Editorial 458

New Pumping Plant at Corcoran 460

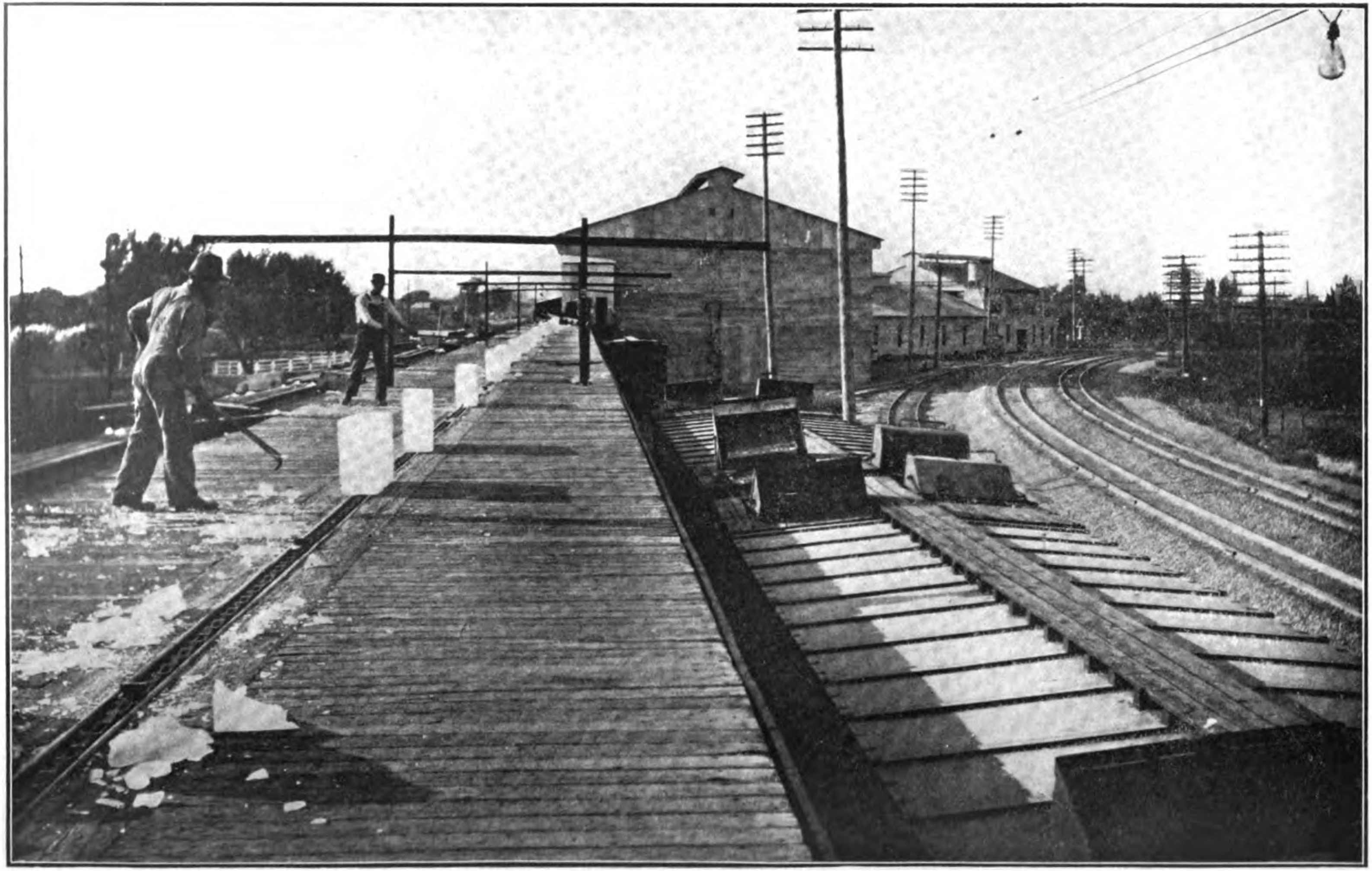
Raising of Turkish Tobacco 461

The Live Wire 462

News Around the Loop 464

Directory of Company Officials 475

Vol. 1 **TEN CENTS THE COPY** **No. 10**



The Icing Platform of the Fresno Plant of the Valley Ice Company—Southern Pacific Company Tracks on the Left, Santa Fe on the Right

SAN JOAQUIN LIGHT AND POWER
MAGAZINE

VOL. I OCTOBER, 1913 NO. 10

Electrically Operated Plants of the Valley Ice Company Among Largest in Country

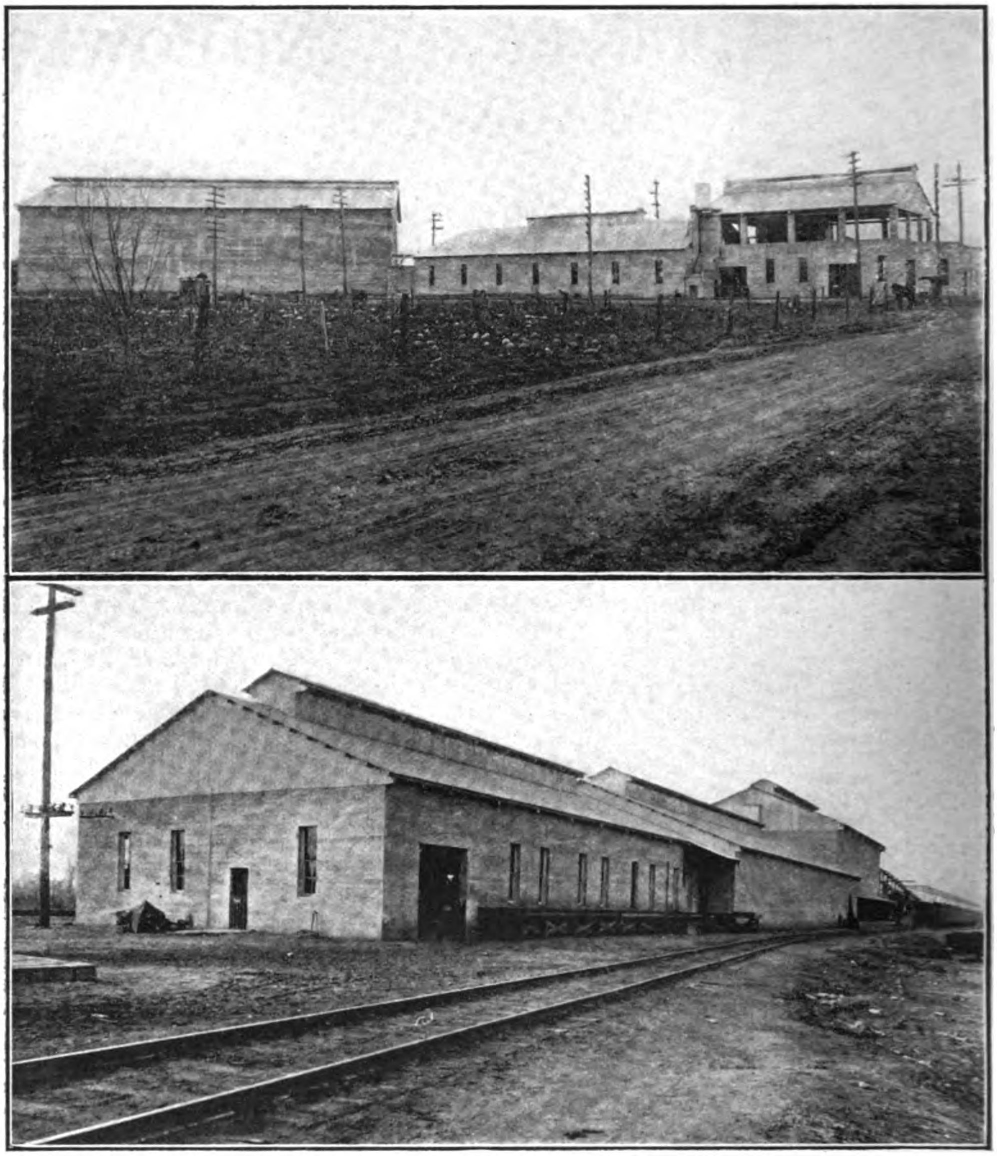
A NECESSARY ally of the fruit and produce business in California is ice manufacturing and refrigerating. The former products have their market in population centers and states foreign from where grown and hence require railroad transportation varying in length from several hundred miles to almost as many thousand. To prevent their contents from perishing while in transit, icing stations are maintained along the shipping routes, and every car, after having been iced at the commencement of the journey, is reiced at regular intervals along the way.

In the San Joaquin Valley two of the largest electric driven ice factories in the country are operated for this purpose. They are the plants of the Valley Ice Company located in Fresno and Bakersfield; the former in the center of the greatest growing district in the west, and the latter an important railroad point for both east and west bound traffic. The Fresno plant is known as an initial icing station, although considerable reicing is done during certain seasons of the year. The Bakersfield plant is strictly a reicing station. Both plants are operated for railroad use exclusively, and although by far the greater part of their output is for car refrigerating, ice for passenger car service is supplied to both the Southern Pacific and Santa Fe at different valley points.

The Valley Ice Company has been in operation but a comparatively short time. The first block of ice pulled in the Fresno plant was on July 16, 1910, while the Bakersfield plant began manufacturing April 17, 1911. Since that time the total output of the two plants has been approximately 130,000 tons. The Fresno plant supplies both the Southern Pacific and Santa Fe traffic from the factory located at a point on Railroad avenue where the respective rights of way of both railroads pass on either side. The Bakersfield plant gives service to the Santa Fe only.

Owing to the difference in demand upon the two plants the Fresno factory is not operated the year round, closing down after the rush of the fruit season, generally about the first of November, until the following April, during which interim improvements and what repairs are necessary are made. The Bakersfield plant, being a reicing station, is in operation steadily throughout the year. A cold storage department is also maintained at this plant.

In type of construction the two plants are similar. They are built of reinforced concrete and steel, and represent the latest in ice factory design and arrangement. The ice making machinery installations are the same in both places although the maximum manufacturing and storage capacities of the Fresno factory are the larger. The storage vault of the Fresno plant will contain 8200 tons while that at Bakersfield 5000 tons. The Fresno plant has a daily manufacturing capacity of 150 tons while the max-



The Plants of the Valley Ice Company—Above, the Fresno Plant; below, the Bakersfield Plant

imum output of the Bakersfield plant is 90 tons.

Even with this large capacity the Fresno plant at times during the rush season is unable to supply sufficient ice and is compelled to draw upon the southern plant. During this season the big plant is run at maximum manufacturing capacity in addition to having the big storage vault to draw upon. As soon as the season closes and the storage is filled sufficiently to care for the demand over the winter months, the machinery, which is subjected to a heavy strain, is completely overhauled. In the spring, when the plant resumes operations, the big storage vault is again filled for the annual rush season.

Each plant may be said to be divided into three sections: the big storage vault, the tank room and that portion which houses the machinery, the condensers and the electric transformers and control. All of the buildings are of reinforced concrete and all of the insulating material, which must be used in construction to retain the cold and keep out the heat, is two-inch cork, furnished by the Armstrong Cork Company, and applied in double thickness. The walls of the big concrete vaults are eighteen inches in thickness. The interior surface of the sides and ceiling is first given a coating of pitch and then the double thickness of cork is applied, making an insulation four inches through. The flooring is of eight inches of concrete with a four-inch insulation of cork sandwiched halfway between. Connecting the main storage vault with the tank room is a small storage, for the handling of the daily output, which is of the same construction. The interior measurements of the big vault of the Fresno plant are: length, 149 feet; width, 72 feet, and height, 36 feet.

The tank room is where the freezing process is accomplished. Here are two immense tanks, one holding 1200 cans and the other 1056 cans, which contain the salt brine, and the coils through which the anhydrous ammonia is forced. The tanks are of quarter inch boiler plate and rest on a floor made of six inches of concrete and four inches of cork insulation. Ten inches of granulated cork surrounds the tanks on the sides and ends, and an eight-inch wall of concrete encompasses the whole. One tank is 99 feet in length and 30 feet wide, while the smaller is 95 feet in length and 29 feet wide. The cans, in which the ice blocks are formed, are 48 inches high, 22 inches wide and 11 inches thick. They are stood on end and have a wooden covering. In one tank there is 3.4 miles of coil and 3.7 miles in the other. The daily capacity of this room in Fresno is 150 tons while in Bakersfield it is 90 tons.

The ice is manufactured by the direct expansive system. There are two large ammonia compressors, one a 15 inch by 36 inch twin and an auxiliary 8½ inch by 26 inch twin, driven by electric motors. The compressors are made by the Ice and Cold Machin-

Tank Room Showing Crane and Automatic Air Hoists Carrying Four Blocks of Ice at One Time. Also Automatic Devices which Fill Empty Cans with Desired Amount of Water for Freezing

ery Company of St. Louis and are known as the Ball type. The motor installations on these machines are different in the two plants. Connected to the big machine in the Fresno plant is a 500 horsepower Westinghouse motor, rated capacity, the actual load, however, being less than half that rating. Two 50 horsepower Westinghouse motors phased together drive the smaller machine. In the Bakersfield plant a 200 horsepower Westinghouse motor drives the larger machine and an 85 horsepower General Electric motor the auxiliary.

Mr. W. E. Keller, President of the Valley Ice Company. Enterprises in which Mr. Keller is Interested are among the Largest Consumers of Electricity for Industrial Purposes in the State

The cans are filled automatically to hold 300 pounds of water, which freezes into blocks of that weight. The water is obtained from wells drilled on the premises and is conveyed directly into the cans. This ice is used for refrigerating while that to be used in the passenger is clear and is made by a process called agitating which forces the air out of the freezing block. Three 8 inch by 8 inch Curtis air compressors are used in this process.

When the cans are ready for pulling they are removed from the tank by air hoists and then conveyed by a crane to a tank of warm water at the entrance to the daily storage room where they are dipped before the ice will leave the can. The ice block then is emptied into a chute through which it travels into the storage room. There are two cranes. Each crane carries four cans at one time, two on either end.

The anhydrous ammonia, after its usefulness has been expended, passes from the coils in gaseous form to the condensers where it is reduced to liquid and is conveyed back to the compressors. The condensers in the Fresno plant are located on a floor above the machinery room, while in Bakersfield they are on the main floor in the rear of the tanks.

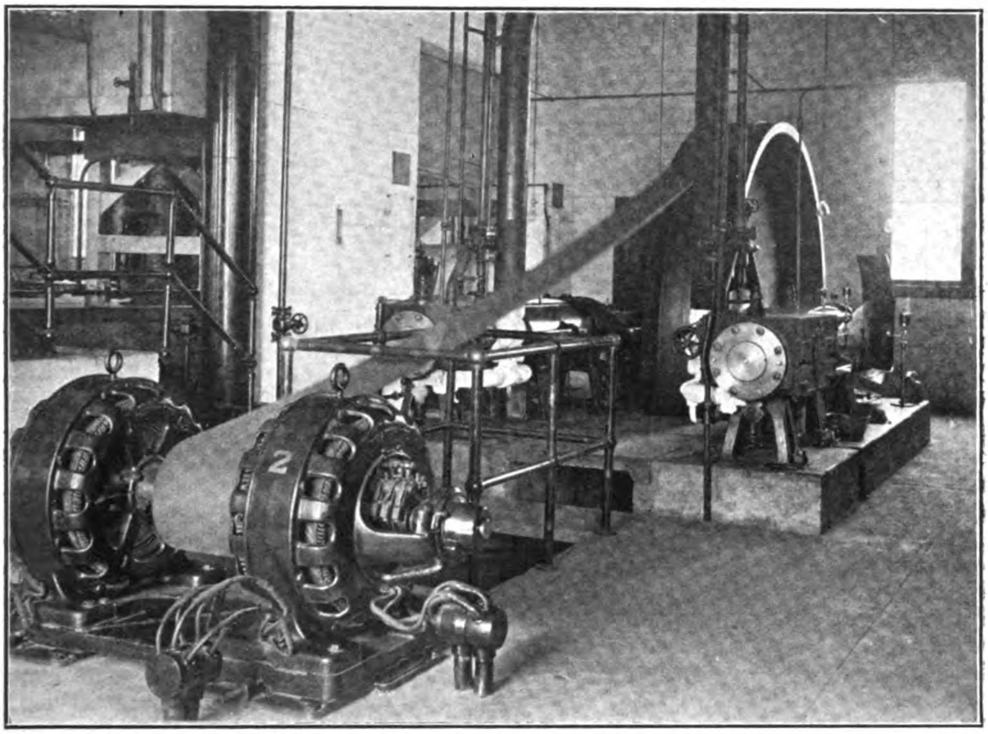
The temperature of the brine in the freezing tanks varies from 14 to 16 degrees Fahrenheit, while the length of time consumed in freezing is from 32 to 36 hours, according to the temperature. In the storage vaults the temperature is kept from 24 to 26 degrees.

One of the transmission lines of the San Joaquin Light and Power Corpora-

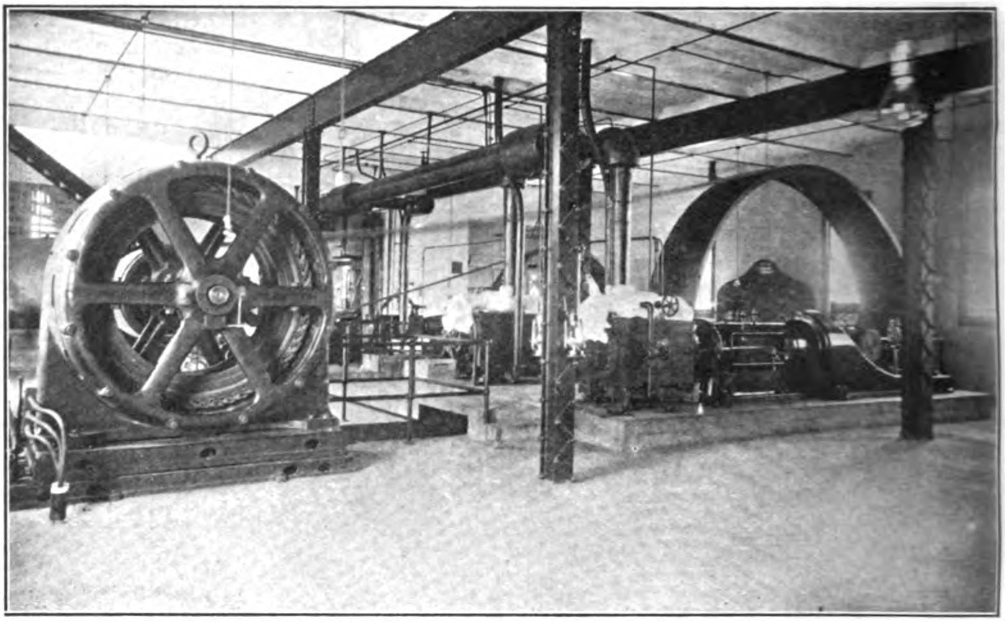
A Busy Afternoon on the Fresno Icing Platform tion passes by the Fresno plant. In a room especially designed for their installation three 200 K. W. General Electric air blast transformers receive the current of 30,000 volts on the high side, through an automatic Kelman oil switch, and deliver it as power to the local switchboard at the working pressure of 440 volts from where it is distributed to the various motors throughout the plant. In Bakersfield the power is taken from a 10,000 volt distribution line instead of a transmission line, and is stepped down by three, 150 K. W. oil cooled General Electric transformers. There is a 5 horsepower motor blower outfit in the Fresno transformer room for furnishing air to the transformers.

In addition to the motor equipment on the ammonia and air compressors, a 25 horsepower motor operates the chain drag on the icing platform; a 20 horsepower motor the chain drag from the large storage vault; a 15 horsepower motor the chain drag from the daily storage; a 5 horsepower motor, car loading chute on the Southern Pacific side of the loading platform; a 3 horsepower motor, an elevator in the storage vault for piling ice, and two 7½ horsepower motors on the pumps operating the wells. There is also a small motor driving a 110-220 volt D. C. generator for lighting, hence making in all an actual operating capacity of about 380 horsepower.

The refrigerator cars are iced from a platform. In Fresno this platform is 1000 feet in length and is used on both sides, by the Southern Pacific on the one side and the Santa Fe on the other. It has a capacity of twenty cars to the side or a total of forty cars. An endless drag chain moxes down through the center of the platform at a moderate rate of speed. The blocks of ice are elevated from the storage



Auxiliary Compressor in the Fresno Plant, Driven by Two 50 Horsepower Westinghouse Motors Phased Together, Showing Plan of Connection and Sliding Iron Base upon which They are Set



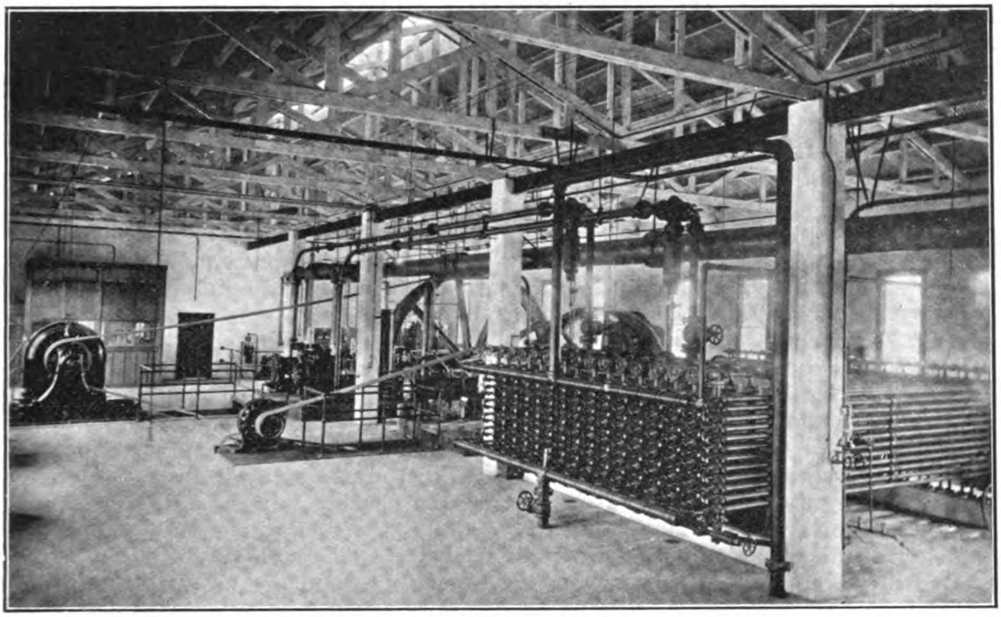
500 Horsepower Westinghouse Motor and No. 1 Compressor in Fresno Plant

vaults to the loading platform by double chain drags and here they are delivered onto the single chain drag on the platform. Flites, or "dogs," keep the blocks on the chain by taking hold at the rear. Workmen provided with long ice hooks, or pickeroons, load the cars. A board extends from the platform to the opening in the roof of the refrigerator car. With his hook the workman pulls a block of ice from the chain and, with a blow from the end of the hook, breaks the block into two pieces, which he skillfully slides across the board and down into the car. The icers must work rapidly in order to keep apace with the string of ice on the drag chain.

The amount of ice placed in a car varies of course with the size of the car and the method by which is it iced. Never less than one block, which weighs 300 pounds, is put in while the maximum extends to as much as 11,000 pounds. During the rush season between thirty-five and forty men are employed in the work. The entire plant is lighted by electricity and operations proceed throughout the night as well as during the day. The regular force at the Fresno plant consists of between eighteen and twenty men. At Bakersfield seven or eight are regularly employed and from fifteen to twenty in the rush season.

This year the busy season for the Fresno plant began with July 23rd and from then until the first of October, from 140 to 182 cars were iced daily. The season was little more than two months in duration this year, but in that time 5147 cars were dispatched from this plant. The record for the year will be about 6000 cars. Leaving Fresno over the southern route cars proceeding over the Santa Fe are reiced at the Bakersfield plant. There are other reicing stations further along the route. The Bakersfield plant this year will handle about 3000 cars.

At the head of the Valley Ice Company is Mr. Will E. Keller of Los Angeles, who is also president of the Globe Grain and Milling Company. Mr. Keller is an enthusiastic advocate of electricity for industrial purposes and these enterprises, of which he is the directing head, place him in the foremost rank of users of electricity in the west. The milling company has



Interior of the Bakersfield Plant Showing Motor Driven Compressors and Condenser

a 100 horsepower motor in the operation of a mill at Woodland; in San Francisco the big mill of the Globe Grain and Milling Company, which has a capacity of 1600 barrels a day, has a total motor installation of more than 900 horsepower, and the Los Angeles mill, also electrically operated, turns out 1000 barrels daily from a motor installation of 600 horsepower.

The plants of the Valley Ice Company are held up as a model for efficient management and operation. The type of construction renders them practically fireproof and affords the most favorable of working conditions for the employees. James R. Erskine is the superintendent in charge of the operation of both plants. His headquarters are in Fresno.

The icing season for the present year is practically at an end, and manufacturing at the Fresno plant will cease about the first of November. The reicing stations will now care for the moving of the smaller crops such as celery, oranges and asparagus.

The Despised Pomegranate Now Big Money Maker

This season, for the first time, there is said to be a heavy demand for the pomegranate. The east is fast becoming educated to the fruit and in the big market centers the demand for the California pomegranate is especially brisk. At the prices the fruit is now bringing, the grower is enabled to net about $150 per ton which is very profitable business for him. It has been only recently that much attention has been given to the commercialization of the pomegranate. The trees for the most part were set out for ornament but as they thrive and bear heavily in the valley climate, efforts to derive revenue from the product have been meeting with excellent success. For several years past the sale has been increasing and this year, for the first time, the fruit companies handling the fruit report an actual active demand.

The Story of Emerson, High Priest of the New Science of Efficiency

By HERBERT N. CASSON

Reprinted by Permission of The American Review of Reviews.

HARRINGTON EMERSON is the man who made Efficiency a national slogan. It was he who startled the nation by saying, "I can show the railroads how to save a million dollars a day." It was he who first discovered for himself the principles of Efficiency, in a remarkable career of romance and adventure, and who then persistently compelled the whole United States to respect the new ideas and to listen to the gospel of Efficiency.

Efficiency!

Thanks to Emerson and his co-workers, this word has become the keynote of American business. It is the watchword of our trade conventions. It is the text of speeches, endorsed by Harvard University, by the City of New York, by the Federal Government. It is no longer a mere set of theories. It has been so widely adopted, by corporations and public officials, that we may fairly call it the art of success, worked out from the American point of view.

The Emerson definition of Efficiency is "the elimination of all needless wastes, in material, in labor and in equipment, so as to reduce costs, increase profits and raise wages."

The Roosevelt definition is "applying the conservation principle of production."

The Brandeis definition is "universal preparedness."

My own definition is "the securing of a higher percentage of results, by applying scientific methods to the activities of the business world."

No definition, however, can be very accurate, for the reason that Efficiency is new. Very little of it has been written down in books. As a general tendency, it is everywhere; but as a clear-cut system of thought, it exists only in the minds of a comparatively small number of men.

Those who appreciate and understand Efficiency are too busy to explain it to others. They are applying what they know and learning more. Naturally, they are somewhat inclined to keep this valuable new knowledge to themselves, just as the gold miner, who has struck a rich vein of yellow treasure, is inclined to be secretive about his good luck. The total literature of Efficiency would barely fill a five-foot shelf, and most of the books are special studies of one problem or one trade. Just as there was only one book in 1865 which gave a general explanation of the theory of evolution—Darwin's "Origin of Species," so there is today only one book which gives a general explanation of the Efficiency movement—Emerson's "Twelve Principles of Efficiency."

Efficiency began—when? Only a few years ago, in its present form. In 1900 it had no name and the "Engineering Magazine" christened it "production engineering." Several years later, Emerson fixed upon the word "Efficiency" as being better fitted to describe the new ideas; and later still, Mr. Frederick W. Taylor chose the phrase "Scientific Management."

In its larger sense, of course, Efficiency is nothing less than the scientific spirit in its latest manifestation. Efficiency really began when some ancient Egyptian or Assyrian first applied geometry to the problems of our globe. It grew during the lifetime of such pioneers as Democritos of Abdera, who conceived of the universe as a mechanism twenty-two centuries ago. It was strengthened by Euclid and Archimedes and Copernicus and Kepler and Newton. It was applied to discovery by Magellan and Columbus, to chemistry by Boyle, to anatomy by Vesalius, to the study of nature by Darwin, to geology by Lyell, to militarism by Von Moltke, to the art of invention by Edison, and to the culture of fruits by Burbank of California.

Whoever first conceived of a wheel —that ingenious circular leg with a perpetual foot—helped along the international movement towards an efficient civilization. Whoever first made fire and cooking and clothes and flour and leather and houses—every one of these unknown pathfinders did his share in pushing the race upwards. Above all, perhaps, James Watt, who gave us the steam-engine as the chief prime mover of the world, created the Age of Machinery, and thus shifted the industrial nations from a basis of muscle to a basis of brain.

Since Watt, the builders of Efficiency have been too numerous to name. Under the stimulation of steam, men began to think faster. They began to invent, until in the last hundred years a million patents have been issued to American inventors. Whitney gave us cheap cotton; Howe gave us cheap clothing; McCormick gave us cheap wheat; Morse and Bell gave us cheap communication; Rockefeller gave us cheap oil; and Carnegie gave us cheap steel. All of these men, and hundreds of others, gave us the material foundation upon which we are now preparing to erect our structure of Efficiency.

The next great step, in the progress of civilization, is to apply these victorious principles of Efficiency to man himself. The next factor to master is the human factor. We are now about to study men as well as machines. We are to develop the new worker, who is not to be a cog nor a wage-serf, but rather an Architect of Labor. We are to unite Labor and Capital and the Public by adopting methods that serve the interests of all; and by developing the personality of the worker as well as the productiveness of the plant.

So hope the prophets of Efficiency. Is it a dream? Who knows? So many dreams have come true in the last fifty years that we are no longer doubtful of dreams. Anyway, Business as well as Science may have its dreams. If a scientist may hope to create life some day out of carbon and water and ammonia and a few salts, why may not a manufacturer hope to eliminate waste and friction and ill-will, in the making and selling of his goods?

Efficiency is not a new name for an old truth, so far as it relates to industry and to individual success. It is an absolutely new point of view in the business world.

It is not Expert Accounting, for the reason that accounting deals only with records and not with methods.

It is not Economy, for the reason that mere saving is often the most suicidal of all business policies.

It is not Energy, for the reason that misdirected energy is the most universal of all industrial wastes.

It is not Slave-driving, for the reason that one of its main benefits is to elevate and profit the wage-workers, not to degrade or oppress them.

And it is not System, for the reason that the most useless and wasteful actions can be done in the most systematic way. There can easily be too much system, but there can never be too much Efficiency.

Efficiency means more net. This little word of three letters—N-E-T, has in recent years become the most important word in the vocabulary of business. Net means not how much money you took in, but how much you have left. If you take in three million dollars and pay out the same amount, you have no net at all. It is better to take in one dollar and have ten cents left, than to take in ten dollars and have only five cents left.

It is the net that decides whether or not we are winning or losing, in the game of business. Gross receipts may pile up as high as a mountain, and yet at the end of the year there may be no residue of profit. It is not volume of business that makes net. Neither is it system nor energy nor resources. It is all these, plus Efficiency.

Consequently, there is no other subject, just at the present crisis in our industrial evolution, that is attracting such keen interest as Efficiency. Hundreds of thousands of dollars are being spent by railroads and other corporations to cut down the wastes and losses that arise from slipshod management. Cities and even states have employed experts to teach them the methods of Efficiency; and even the Federal Government has a President's Commission on Economy and Efficiency under the supervision of Dr. Frederick A. Cleveland.

Emerson was not, of course, the inventor or discoverer of the Efficient Life. He was not a Columbus, enlarging the known world by bringing to view a new continent. He was one of the notable band of pioneers, numbering such men as Taylor, the steel-mill scientist; Duncan, the industrial chemist; Gilbreth, the master of the craft of brick-laying; and Going, the indefatigable editor of the Efficiency group.

But Emerson has been, from the first, much more than a pioneer. He is much more than a compiler of industrial data. He is at all times a guide over the whole field and not merely a local investigator. He appreciates the work of others with a generosity that is seldom found in pioneers. He has come to be generally regarded as the one man who can best represent his fellow experts, and who, therefore, can tell the story of Efficiency in the most helpful and comprehensive way.

For at least three very good reasons, Mr. Emerson may be regarded as the central figure of the new Efficiency Movement:

1. He was first to compel the attention of the nation to the subject of eliminating industrial waste.

2. He was the first to try out the principles of Efficiency by applying them to the greatest variety of industries and professions.

3. He has been the most tireless trainer of young men and counselor of experts, being the only member of the original Efficiency group who was fortunate enough to have had both an engineering and a pedagogic education.

It is now ten years or more since Emerson first announced the slogan that made Efficiency famous, "I can show the railroads how to save a million dollars a day." For years he went from one railroad president to another, and met with an almost unanimous series of refusals and rebuffs. One railroad, and only one, appreciated his revolutionary ideas. The Santa Fe Railroad engaged him for a term of three years, and the remarkable results which he produced during those three years are still pointed to as the high-water mark of railroad efficiency.

But not even the betterments which he established on the Santa Fe could influence the other railroads to adopt the new knowledge and the new methods of which Emerson was the advocate. Then came the important case of the Shippers vs. Railroads. Brandeis was the attorney for the Shippers. He knew little or nothing at that time of either Emerson or Efficiency, but he was quick enough to see that Emerson had a new point of view from which the Railroads could be attacked and defeated.

The Railroads were asking permission to raise their freight rates; while the Shippers maintained that the freight rates were already high enough. "Instead of raising freight rates," said Brandeis, "why not eliminate waste? Here is Harrington Emerson, the greatest of all efficiency engineers, and he maintains that the Railroads are wasting a million dollars a day."

Mr. Emerson was put on the stand, as were other experts of national reputation. They overwhelmed the Railroads with their facts and figures. They presented a new variety of data against which the amazed railroad experts had no defense. They convinced the members of the Interstate Commerce Commission, won the case for the Shippers, and established Efficiency as one of the most powerful and practical factors in the scheme of our national life.

As to the improvements that Emerson has made in various plants, many of them are well known in the world of manufacturing. In one Pittsburgh plant, the yard gang was cut down from seventy to twenty-six by means of a dispatching-board. In the Topeka railroad shops, wages were increased 14 per cent, costs were reduced 36 per cent, and the output was moved up to 57 per cent. A large forging shop in Kansas doubled its output with a decrease in the payroll of $500 a month. A Canadian engine-plant made five locomotives a week, instead of three, without more men or more machinery.

Emerson has handled union and non-union shops alike, without any serious opposition from employees. "The workmen," he says, "give me less trouble than anything else." He has always maintained that no improvement can be made permanent unless it helps the men as well as the corporation. He meets the men fairly and respects their point of view until he cancels their spirit of suspicion and hostility. "When that man Emerson gets busy in a factory," said a Santa Fe foreman, "he changes the men from half-hearted loafers into active, honest, self-respecting men, who take an intense interest in their work."

As might be expected, Emerson has found his efficiency profitable. He has made millions for others and several hundred thousands for himself. But he has often followed the line of least personal profit.

In the sorting of his morning's mail, the letter that pleases him most is the one that contains a new series of facts or figures bearing on the elimination of waste. The next most welcome letter is the one that asks an intelligent question on some matter of better methods in industry. And the third most interesting letter is the one that contains a check in payment for his services.

I remember very well the look of helpless protest upon the face of one of his business managers when Emerson arrived home from a trip to Cincinnati and announced delightedly that he had refused a big job in that city and had paid all his own expenses.

"It was worth thousands of dollars to me to see that factory," he explained. "It was 95 per cent efficient. I never saw a better plant. So I just told the owner of it that I could do nothing for him, and that I was greatly indebted to him for both his efficiency and his courtesy."

On another occasion, when invited by the War Department to study the target practice of our warships, he went with the expectation of finding antiquated methods and the poorest results. To his surprise and delight, he found the most marvelous efficiency. He learned that an American battleship can fire a salvo of 12-inch shells in thirty seconds, while steaming at twenty-one knots an hour, hitting a target sixty feet wide and thirty feet high, eight miles away, with six shots out of twelve. One hit every five seconds at full speed! Emerson was fascinated. He at once forgot that he was the central authority on efficiency and became for the time a student.

In the work of propaganda, he is as tireless as St. Paul. He is incessantly traveling from city to city, and from corporation to corporation, making speeches, preparing reports, warning, advising, investigating. As an orator he is not especially effective, because of his lack of humor; but there have been occasions when he has risen to the peaks of eloquence and truly rhetorical power.

One of Emerson's rarest gifts is the power of compelling his associates to think. No one can meet him, even for a half-hour's informal conversation, without being forced to investigate and reflect. No habit is safe from his scrutiny. He is incessantly asking "Why?" "What for?" "How much?" "How do you know?" He is as disturbing as Socrates was to those Athenians who took the opinions of their day at face value.

Once, when he and I were walking past a certain public library, I remarked:

"What a magnificent structure that is!"

"Is it?" he retorted. "What is a library for? Why should it be made of marble? Why is it built like a storage warehouse or an armory, with its thick walls and narrow windows? An efficient library would be built of steel and glass, so as to give the greatest possible safety and the greatest possible light. As for this building, anyone can see it was designed mainly for the profit of the contractor and the glory of the architect." It may be true that with a half-hour of further study Emerson would have come to a different conclusion; but the incident shows how he will take nothing for granted, and how with him the first thought must be—Efficiency.

Emerson was born in New Jersey in 1853 and was educated in Europe. At the age of nineteen he entered the Royal Polytechnic at Munich, and became absorbed in mechanical engineering. Many of the professors there were men of great renown—Linde, Bauschinger, Beits, Erlenmyer and others—but modern mechanical development had not yet really begun. There were no electric lights, no dynamos, no motors, no gas engines, no steam turbines, no acetylene, no telephones, no phonographs.

In 1873, Emerson read for the first time Darwin's "Origin of Species." This introduced him to the fascinating writings of Huxley and Tyndall. These writers opened up to him a new world of science and improvement, and he became at once one of the most zealous and active propagandists of the theory of evolution.

In 1876, after having spent the summer at the Centennial Exposition in Philadelphia, Emerson received a call to the professorship of modern languages at the State University of Nebraska. This again was a new experience. He found himself in charge of a department in a rapidly growing university, in which there was as yet no system and no solidarity. Here he and several other young professors, with iconoclastic tendencies, went diligently to work, remodeled the university, and made it an efficient institution.

At the end of six years his salary as a university professor was $1800. Emerson concluded that this was not enough. He left the university and became a dealer in real estate on the frontier. The first year he cleared $5000, and presently found himself on the staff of the General Manager of the Burlington Railroad. For several years he was the general "trouble man" of the railroad. Every odd job fell to his lot, such as the selection of town sites, excursions of settlers, prospects of coal mines, crop failures, freight rates, and taxes.

After ten years of frontier and railroad life, he moved to the city of Denver. By this time he had become wealthy, and had a wide Western reputation as a successful man of large affairs. He became at this time a representative of an English syndicate which was seeking American industrial investments. This work obliged him to investigate from the inside many different mills and factories. He began for the first time to shape in his own mind the causes and remedies of failure. All told, he investigated more than 200 American plants, and in this way laid a broad basis for his doctrines of Efficiency.

In 1896 there came the news of gold discoveries in Alaska. Fascinated with the risk and the possibilities of great wealth, Emerson at once went to the Yukon. He opened and financed the longest star route in America—2700 miles from Juneau to St. Michaels. He learned to drive dog sleds, and to travel forty miles a day trotting behind the sled. He came into contact with pioneer conditions at their worst, and learned in several cases how they could be overcome.

The first factory which came under his influence as an efficiency engineer was that of the Appert Glass Company. This was a simple, one-product plant, which had grappled with the new problem of making wire glass. Emerson was made practically the dictator of this factory, and had, for the first time, full swing in the application of his new principles. The results were electrical. At the end of the first half-year, a monthly loss of $3000 was converted into a monthly profit of $10,000.

This success decided the trend of his career. He was amazed to find out how great were the wastes and the losses, and how easily and quickly they could be overcome. Here, in a few months, he had achieved the impossible. He had raised both profits and wages and lowered both costs and selling price.

From here, after several years of miscellaneous work in small factories, Emerson went to the help of the Santa Fe Railroad. The work which he did here is, perhaps, his best and most enduring monument. In the carrying out of the betterments on the Santa Fe, Emerson had to deal with 12,000 employees, who were busy in twelve Southwestern States. He built up a corps of thirty assistants, many of whom are now recognized as the most skilled specialists in their various lines.

The story of the Santa Fe improvements has often been told, and no more need be said here than that it is now nationally recognized that the Santa Fe Railroad has become a model for all students of railroading and efficiency. Right at the outset, after a very few months of work, Emerson showed how to eliminate annual wastes and losses to the extent of $1,500,000.

At the conclusion of the Santa Fe contract, Mr. Emerson opened a consulting office in New York City, so that he would be able to handle a number of corporations at the same time. He has since worked in over 100 different plants, many of them the largest of their kind in the world. His staff of assistants varies from thirty to fifty, and his company is practically a great training school or university of Efficiency.

He is a member of the American Society of Mechanical Engineers, Ingenieurs Civil de France, Efficiency Society, American Railway Master Mechanics' Association, American Economic Association, American Foundrymen's Association, several other technical societies, the Boston City Club, and the Railroad, Engineers', and Aero clubs, of New York.

Harrington Emerson is by nature a pioneer. He is more in love with the future than the present. He is concerned with the battle of life, but not at all with the victories and the rewards. He is still a lonely figure in the midst of a multitude that throngs about him to do him honor.

What he planned for has come to pass. What he preached in the desert of indifference is now being shouted from the housetops. The word Efficiency has become a national slogan. Corporations are vowing allegiance to it, in their annual reports. Politicians are using it to persuade voters. Advertisers are using it to sell goods. Preachers are using it to obtain congregations.

Yet Emerson all the while is absorbed in a new series of experiments. Just as Daniel Boone was wont to move farther back into the forest, when he saw the smoke of other men's camps, so Emerson has dropped those phases of efficiency which have become generally understood, and has delved into further researches concerning which the public has little or no knowledge.

If I may, with a word or two, indicate Mr. Emerson's present line of investigation, I would describe it as a swing from methods to men. Instead of applying machinery to raw material, he is rather trying to introduce personality into the whole task of production. His new word is aptitude. His new thought is that the most important of all machines is man himself. The man and the job must fit. There must be the right man for the work, as well as the right tool and the right raw material. He is still bent upon the elimination of waste, but today it is not so much the waste of power or machinery or materials; it is the waste of misplaced men.

Just as a long-legged man makes a good apple picker but a poor shoveler, so there are differences of temperament, differences of education, differences of mentality, which make or mar a man as a producer of wealth. How to ascertain and chart the variables in men, how to pick exactly the men for each species of labor—such are the problems that are at the present time absorbing his nights and days.

Many people ask, "What does Emerson actually do, to earn his unusual fees? How does he work his industrial miracles? What is the process by which he increases the efficiency of a great manufacturing plant?"

To answer such questions is not easy. What was learned in a lifetime cannot be told in a moment. But usually, when Emerson pays his first visit to a factory, his plan is to go swiftly through the whole plant, so as to get a general view of its condition. He probes here, there, and everywhere to dig up the basic facts. He takes nothing for granted. He asks, "Is this factory in the right location? How far is it from its raw materials? How far from its market?" He inquires about the plan of the building. Was it designed for its own purpose, or did it grow up in a haphazard way? How is the raw material unloaded? How is it inspected? Is it stored properly? What is its path through the factory? Are the machines placed in proper sequence? Who is in charge of the tools? Is there any one workman who is a specialist on belts? How are the records taken? Who maintains discipline? What inducements are offered for better work? If a mechanic does his stunt in half the time, what does he get as a reward? What is the percentage of breakage? Does every machine pay a net profit? How much actual working time is obtained from each machine? How many laborers are allowed in a gang? Who fits the men to the jobs?

Such are Emerson's test-questions. By the manner in which they are received, and the readiness with which they are answered, much can be discovered. Meanwhile, Mr. Emerson is keenly watching to catch the general spirit of the factory. He notices the faces of the men. Are they sullen or cheerful? Are they soggy or alert? Are they pushing ahead or hanging back? How many are standing idle? How many are walking about?

In all, there are four factors that he investigates,—men, machinery, methods, and materials. At the end of the survey, he decides which department of the factory is in worst condition. Here he begins. Certain definite changes are made at once. The causes of the trouble are removed. Then three or four young men are set to work making "time studies" in this department. These "time studies" are highly important. They are exact records, made by the stop-watch, of the time taken to perform each piece of work. Every job is thus split up into its various parts and analyzed. After days, perhaps weeks, of study, it is learned that a 58-minute job can be done in 33 minutes—a two-hour job in 92 minutes—a four-day job in three days. It is at this point that the skill of the expert is needed, to decide justly and wisely the amount of time that ought to be allowed. Then, following this task of job-building, comes the second of wage-building, and so on from one task to another, until a satisfactory condition has been reached. The problem has not been solved, in the opinion of an efficiency expert, until there is harmony and good-will between the corporation and its employees. When the men produce more and get paid more, with less effort, and when the corporation has lower costs and higher dividends, then and not before may a company consider itself as traveling on the straight road of efficiency.

Emerson is very similar to Darwin in his naive indifference to opposition. He is not at all combative, in the sense that he craves fighting for fighting's sake. Yet he finds himself in a perpetual contest. His habitual mood is one of challenge. No matter whether the object of his wrath is a corporation, or a profession, or a race-habit, he flings down his gauntlet and declares war upon it, if it is caught in the act of inefficiency.

He is as unmoved today by fame as he was in 1908 by neglect. Neither the temptations that come with adulation nor the discouragements that spring from hostility have any marked effect upon him. One by one his young men leave him, caught by the lure of higher pay and quicker promotion. Competitors of all varieties, from competent co-workers all the way down to shallow and worthless pretenders, have sprung up around Emerson; but none of these things move him. He is wholly absorbed in his own studies and investigations.

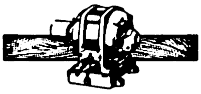
Such is his marvelous energy that he has already lived several lifetimes. He is always working. You can find him at his office in the Hudson Terminal Building invariably at 8 o'clock —an hour ahead of his stenographer. Probably no other man of our time has ever seen and done as great a variety of things, and certainly no other man of our time has done as much to instruct and to inspire the workers of the business world.

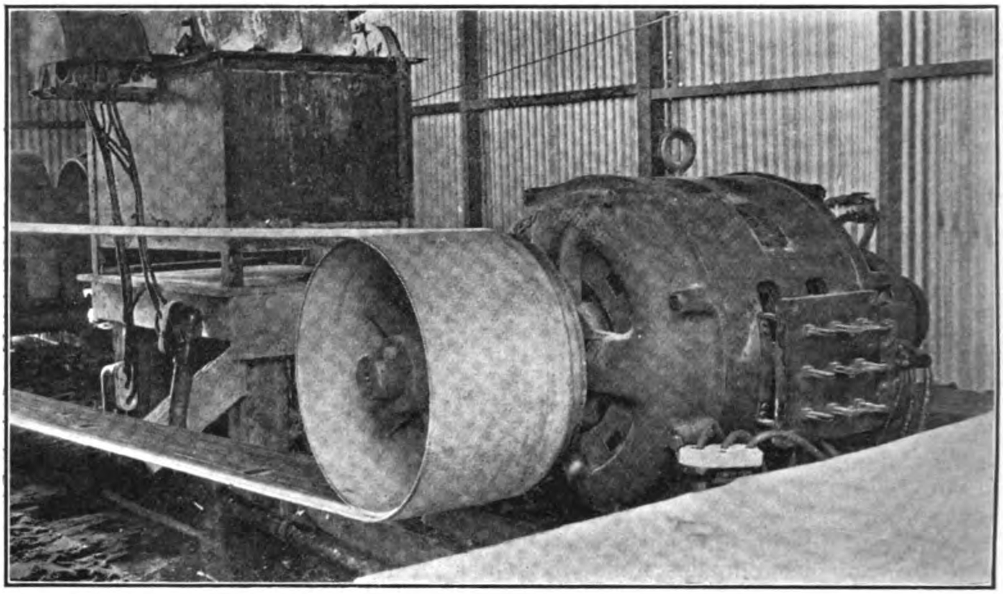
Emerson believes that the big fortunes of the future will be made by the men who know how to prevent waste. Philip D. Armour, the Chicago packer, had the same belief. "We shall see larger fortunes made," said Armour, "out of the things that are now thrown away." There is not only the waste of the railroads, which Emerson places at a million dollars a day, or 20 per cent of the total expenditure. Besides this, there is the waste of the Federal Government, which Senator Aldrich has declared to be three hundred millions a year. There is the horse waste, which the motor-truck and tractor experts declare to be several hundreds of millions more. And there is the stupendous fire waste, which has cost us in the last fifteen years two billions of dollars and twenty thousand lives.

The fact is that the United States has grown to be so big that the making or losing of a million dollars has become a small matter. If every manufacturing plant, for instance, were to save four dollars a day, the total daily saving would be a million. Fifteen cents daily from every factory worker, or ten cents daily from every farmer, or one cent daily per capita, would produce a million dollars a day.

Even such estimates as these are the merest trifling, compared with the problem of waste from a national point of view. According to the Emersonian data, the labor of the United States is only 70 per cent efficient and the capital is only 30 per cent. If this be true then our labor army of twenty million workers dwindles to fourteen millions; and our railroad and manufacturing capital of thirty billions dwindles to nine billions. Complete efficiency would add to the nation a total of six million workers and twenty-one billions of capital. Such is the golden dream of the experts of Efficiency.

What steam did for transportation, say these experts, Efficiency will do in the elimination of waste and risk and drudgery. Just as there is no comparison between the digging that is done in Korea, where nine men operate one spade, and the digging that is done in the Mesaba Iron Range, where three men operate a steam shovel that digs five tons of ore every three minutes; so there can be no comparison between a nation of haphazard and a nation of forethought and scientific precision.





The 60-180 Horsepower Westinghouse Motor Installed for Drilling on Section 15, 31-22, of the Kern Trading and Oil Company in the Midway Oilfield

Electricity Successfully Employed in Oil Well Drilling—Features of Motor

By WILLARD C. JOHNSON
Westinghouse Electric & Manufacturing Company, Bakersfield, Cal.

MOTOR drive for the drilling of oil wells, with standard cable tools, has been in use for a period of time, long enough to warrant the definite statement that this application is a success and that motor drive for this purpose has come to stay. The only necessary requirements are that the location of the wells to be drilled shall be sufficiently close to a suitable source of electric power, that the system supplying this power shall be such, as to insure operation with practically no shut downs, and that the electric power supplied shall be purchasable at a sufficiently low rate. All these conditions are met in those portions of the Sunset, Midway, North Midway, McKittrick, Belridge, Lost Hills, Coalinga, and Kern River fields, which are accessible to the service of the San Joaquin Light & Power Corporation.

One of the most interesting installations yet to be put in is on the section 15, 31-22, property of the Kern Trading and Oil Company in the Midway field. Here a 60-180 horsepower motor has been drilling with excellent success. A close tab has been kept of operations and the contentions advanced by the exponents of the motor have been fully substantiated. The hole was sunk to a depth of 800 feet in 20 days of drilling, during which time the power consumption was 5632 K. W. H. At the rate of one and one-half cents per K. W. H. the cost of the motive power was $84.48. Compared with other forms of motive power the advantage of electricity is readily apparent.

The electrical apparatus, which was especially designed and furnished by the Westinghouse Electric and Manufacturing Company, presents a number of points of interest. The motor itself, which was designed for drilling service, is of the "all steel" construction, developed by the Westinghouse Company. It is a well known fact that for structural purposes, cast iron has a great many disadvantages. Cast steel is better, but the difficulty in obtaining small steel castings which are free from blow holes and other defects, practically prohibits the use of this material for this purpose. The Westinghouse drilling motor has a yoke made from hot rolled steel plate butt welded at the joint, by the arc process, thus making a homogenous ring of steel. The feet, which are of forged steel, are secured to the rolled steel frame ring by heavy rivets, driven on a 100-ton hydraulic press. In every case the rivet fills the hole completely and has a large head, insuring a perfect riveted joint that not only has great mechanical strength, but also eliminates all vibration at any speed for which the motor may be built.

Numerous running tests of the severest nature and continued over a period of two years have established the fact that strains, many times in excess of anything that might occur under the most severe service conditions, are safely transmitted through the frame without any deteriorating effect on the riveted joints made by this high pressure riveting.

This construction is particularly desirable for drilling motors, because it gives great strength to withstand the shock and strain incident to this service, and at the same time gives a motor of comparatively light weight, thus making it easier to transport from rig to rig. In addition to a motor to meet every requirement, drilling service demands a control which shall present the following features: that the motor speed shall be variable over a wide range, that it shall be possible to vary the speed by very small amounts, that the control shall be of such a nature as to be easily handled by the operator, that it shall be simple and possess few wearing parts, and that those parts shall be easily and cheaply replaceable.

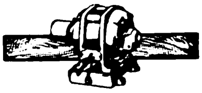
All of these characteristics are possessed by the water rheostat control designed for this service by the Westinghouse engineers. With it it is possible to obtain approximately seventy-five per cent speed reduction. There are no controller notches, and every position is a balanced running position, thus making it possible to vary the speed by very small amounts. The rheostat is controlled by a single hand-wheel mounted on the headache post, making it even easier for the operator to handle than the steam engine. The only wearing parts are the electrodes themselves, and the primary reverse switch, and these are so arranged as to give them a long life, and when necessary, they can be replaced at a very small cost.

When drilling, it is necessary that the motor should slow down slightly as the tool is raised, and then speed up as the tool drops, thus letting the rope slack away behind the tool and allowing the tool itself drop, due to gravity. This result is accomplished by using a motor of the proper size for the job, and then inserting enough resistance in the secondary circuit to get the desired result.

A properly selected motor, together with suitable control, enables the operator to get any "motion" desired. To keep from using a motor too large, and at the same time to have ample power to meet any condition that might arise in handling casing, or other severe service, arrangement is made for changing the motor connections from star to delta, thus trebling the motor rating.

In the particular installation referred to, the motor is belted to a three-speed drilling gear, which in turn is belted to the ban wheel. The pulley ratios are such as to give approximately the right speed for drilling using the intermediate gear ratio, thus giving a higher speed for rapid hoist work, and a slower speed for extra heavy duty. The accompanying photograph shows how the motor is belted to the drilling gear, with the water rheostat mounted on timbers, between the motor and ban-wheel belts.

To sum up, the drilling motor is a success, not only because it does the work for a lesser cost than the steam engine (roughly, a saving a fifty per cent, and in some cases more is possible), but because with the proper equipment it is possible to do the work quicker and with fewer delays than with the steam drive. Thus, we may fairly expect at no very distant date, wherever electric power is available, the electric motor for drilling will be universally used.



California Dairy Cattle Rank Exceedingly High Declares Eastern Expert

California ranks exceedingly high in the breeding of fine dairy cattle and outstanding in the milk producers are the Holstein Fresians. This is the opinion of Professor C. E. Reed of the Kansas State Agricultural College at Manhattan, Kansas, who was one of the judges at the 1913 California State Fair, recently held at Sacramento. According to Reed the dairy show at the fair this year surpassed everything he has before seen in the middle western and eastern states. New York's Holstein herds were the only ones that can come anywhere near the California cattle of this famous breed.

Professor Reed gave particular praise to the two grand champion animals of the fair, Lorena Korndyke, A. W. Morris & Sons' bull, and Inka Tritomia, J. M. McGilligray's cow. This cow nosed out ahead of the famous world's champion milk producer, Riverside Sadie De Kol Burke, for the highest show ring honors at the fair this year largely because she was in better show condition than the champion of last year.

Unusual interest developed in the show ring this year on the part of farmers and others, many questions being asked concerning the reason for the placings made by the judge. Reed remarked that this keen attention, especially from the young men, shows that the dairy interests in California are developing along the right lines. Even though this state is comparatively young in the dairy business it has a good name because the men who have started in the pure bred business have gone a long way to get the best foundation stock in the country. Not even at the national dairy show at Chicago has Reed seen such extreme interest in ringside spectators as at the California fair.

The Jersey show ring was in line with the other high class dairy animals, and the race for grand championship honors was keen between Guy H. Miller's Altama Interest and N. H. Locke Company's King Valet Imp. While the Locke bull was one of the best breeding bulls Reed said he ever saw he said he had to place the Miller bull in the championship on account of his better show ring shape.

The Guernseys lacked in numbers but were excellent in quality; and an outstanding feature in this show was the awarding of the female championship to a junior champion—Charles G. Lathrop's Raymond VIII Desire, which has a wonderful utility type and a great producer for her age.

The Dutch Belted class was small, but two of the aged cows from the Strader herds of Ceres are pronounced to be the best Dutch Belted individuals in America and the same was said of them at the national dairy show at Chicago.

Service—How Employees Better Understanding Between Consumer and Company

By A. M. FROST, District Agent, Santa Maria, Cal.

IN THE June issue of this Magazine there was an article reprinted from Harper's entitled, "The Power That Serves," and written by Mr. Alan Sullivan. This article dealt with the production and distribution problems of a large central power station. It was well written and I am certain that every man who read it and was in any way connected with the central station business felt a thrill of pride as he was taken through the workings of that particular central station in the nation's metropolis. It is bound to make a man feel good to know that he is connected with and is a living part of a business that requires the intelligence, the quick action, the decision and the all-around ability such as is demanded by the serving of electrical energy.

I may be classed as a sentimentalist, and I suppose I am, but I firmly believe that sentiment is the greatest moving element of the world. Sentiment works for the progress of mankind. A man without a touch of sentiment for his work is lost. If he is working without sentiment he is merely working for so many dollars a day and waiting for the time to quit. A man spends the greater part of his life at work and it is to his advantage that he be interested in his employment. Without interest, there is no efficiency; without sentiment, there is no interest.

Mr. Sullivan's article cannot but awaken an interest in even the most sluggish individual connected with the electrical business. Any employee will say to himself, "that is the way we do; we get some action into things when we start."

And not only is this true of the production end of the business, but of the service end as well. When we go out on a case of trouble, be it a service line down or a whole transmission line, we move like a fire department. We get on the job in the shortest time possible. We take the proper equipment along and when we get there we don't stand around and watch the job but pitch into it, clear the trouble and get back to the central station. And when this particular work is checked off, we have the supreme satisfaction of knowing that no one else could have beaten us to it.

Men do not work like that without some touch of sentiment and a sense of pride in what they are doing. To read an article such as Mr. Sullivan's, which shows a keen appreciation of the electrical business, will quicken the pulse of the men in the service and will tend to raise their efficiency. It tells us that our work is recognized, and recognition of this kind amounts to something in the general run of things.

The consumer also gets some valuable ideas from Mr. Sullivan's article. It brings to his attention a line of work and effort to serve him, that he has never thought about before. It will probably make him a little more considerate when things go wrong and the service is interrupted for a short time. It acquaints him with the magnitude of the electrical business, from the central station point of view, and he gets an insight into the many problems that the men in charge have to deal with in their every day routine of work.

Every man connected with the service has his own particular part to play. There is a chainwork of endeavor striving for a common end—perfect service—and no matter how big or small his job every man is an important link in the chain. There are many branches of the business which never come into close contact with the public, and although the general run of consumers know nothing whatever about them there are men in the mountains, in the power houses, in the switching stations, patroling the lines and doing numerous other tasks, who are as essential to their best interests to serve as the men met in the daily routine of the service.

The man at consumers' counter, the meter reader, the collector and the trouble shooter are the men who come into direct contact with the consumers. It is they who have their fingers on the pulse of the service and in whom the company places trust for the keeping of its policy toward its customers. The men at the helm, the president, the general manager and all of the heads of the various departments have the importance of good service continually in mind and are constantly striving for it, but what good are their efforts if the men who actually come in contact with the public are not fitted to assume the responsibility and have not been trained to conduct themselves properly toward the people they serve? The president or the general manager may meet some of the larger consumers but they rarely ever get to the actual heart of things. They cannot; the game is too big, they cannot spare the time. The men who meet the dollar consumers are the men who have the policy of the company in their keeping. These are the men who must be brought to a proper realization of their responsibilities before they will ever be a success in the game or properly carry out the wishes of their employers.

All of us in the business know that we are in a good square game of honest endeavor and fair dealing, but that knowledge is of no material benefit unless we can make the consumer feel it. We can do it. Our own belief in the game is enough to convince, if we but only give it the thought and then fit our thought to action. A great many times a consumer feels that he has been imposed upon and outraged. His meter has been either over-read or purposely set fast. He becomes angry and proceeds to make things as uncomfortable as possible for the company. Then comes the real problem for the man at the counter, upon whom the company depends to settle the dispute. It is distinctly up to him to pacify, explain and make the consumer realize that he has not been imposed upon intentionally, if at all, and that the company not only WILL rectify his troubles but that we WISH to. That is what we are in business for, to serve honestly and fairly.

With tact and intelligence the man at the counter can bring about the desired results and if he cannot do so he is a failure at the job. All of the cards are in his favor. The game is square and he knows that the company will back him up for anything that is within the right. He knows the accuracy of his meters; he knows, or should know, the expense and effort that is gone to annually to keep the meters accurate. He also knows, or should know, that in ninety-nine cases out of one hundred if there is anything wrong with the meter it is running slow. It is a mechanical fact that trouble with the working parts of a meter will set up friction and that friction will make the meter run slower and hence be tardy in recording on the dials.

The man at the counter must take into consideration the factor of human error. We know that men will make mistakes in reading meters and the man who meets the consumer must at all times be willing to see that proper investigation is made of all complaints, no matter how small and trivial they may be. In this way only can we arrive at the desired result, a proper understanding between consumer and company. The consumer in reality is the boss. He is individual for whom the system was constructed and to whom we look for our salaries. Pay attention to the small consumer, the one whose monthly bill does not go much over the minimum. He is the most important of all. Give him quick service and proper attention at all times and we will find, in the long run, that our work will be easier. For he is the General Public. He is the man who forms the opinion. He is the man who says we are square, when he is satisfied, and we are crooked, when he has a dispute with the company.

The men who come in direct contact with the consumers should have it firmly impressed upon their minds and never lose sight of the fact for a minute, that what the company most desires is satisfied customers. These men must be posted in all of the matters that are of interest to the consumers. They should be acquainted with the appliances and be able to advise the consumer how to get the most from the service at the least expense. As an illustration they should be able to recommend economical and efficient lamps and to shows the customer the actual difference in the revolutions of his meter disk when using Mazda lamps, and the old style carbon lamps. Every day we find some customer who has never heard of Mazda lamps, or if he has heard of them, he has formed the opinion that it is some trick of the company invented to rob him. These people have to be shown and convinced. It is for their benefit in dollars and cents, and ours in better service and better feeling of the consumer toward the company.

The man at the counter has a trying time of it. He must preserve his good humor and solicitude even though he hears the same story time after time, day in and day out every month of the year. He must listen attentively to every complaint lodged with him and then proceed to straighten out the difficulties. How many times, particularly from women, does he hear, "my bill is higher this month than it was last month, and I just know that I did not use as much light?" It is hard to smile and dig into the merits of the case. He has to do it though, for perhaps there is just cause for the complaint. He hears this same story many times during the day, and nine out of ten times the complaint is groundless. If the consumer had not used as much light as she did last month the meter would not have said so. We know that but it is up to us to prove it to the consumer.

There is still a tendency on the part of a certain class of consumers to doubt the honesty of the company and the accuracy of meters. This tendency is rapidly diminishing, however, due no doubt to the ever increasing use of electricity and the growing intelligence of consumers in matters electrical. However, one still hears many queer stories. Not long ago I overheard a conversation at the counter much as follows:

"My meter hums like a mosquito and I know it is going to beat the band when it does like that."

The clerk tried to explain that possibly the jewell was cracked and in that event the meter would work slower and in favor of the consumer, but at any rate a repair man would be sent to the house to ascertain the difficulty. The clerk, however, did not get very far with the explanation until he was interrupted in the following strain:

"Jewell in there, is there? Well, I never saw it. It may be a jewell for you but it is no jewell for me. I don't say that you make them run fast. Maybe it is only the company they keep, or the company that keeps them." And with the parting shot that if we did not fix the meter he would throw it into the street, the customer fled from the office.

He did not throw the meter into the street, however. That night the wise clerk called at the customer's house, accompanied by the meter man, and took care of the meter trouble while the customer stood by and listened to a dissertation on the inside workings of a meter. In the end he was well satisfied to pay his bill, for in addition to explaining the mechanism of the meter, the meter man discovered a light burning in the cellar which some one had forgotten to turn off about a month before.

Another incident is one concerning Mrs. Casey who, "just told that smart young fellow at the office that she would not pay a cent more than one dollar a month and if her bill was more than that he could shut the light off. And you just bet her bill was never more than a dollar a month after that."

I don't know the original Mrs. Casey, but I think she must be dead now for I first heard of her troubles about fifteen years ago when I was breaking into the game. However, her story has since traveled by the clothes line telephone across half of the back yards of the country. These imaginary troubles of consumers and the old stock complaints are the hardest to combat, and they are the most dangerous for the company. There is no issue involved except a fiendish desire on the part of a certain class of consumers to kick against the company. These men are the kind who are always against the public utilities no matter what is the issue involved. They kick against spending a dollar a month for water, then turn around and spend more than that amount daily on conversation liquid in order to keep up a flow of talk on the subject. This is the man who insults the collector every time he calls. We make a practice of trying to convince him that we are not trying to cheat him. Oftentimes it is a hopeless undertaking. One day the collector came in with a red face and a large grouch. "That fellow Blank is getting worse every time I call," said the collector. "Now he is not satisfied with calling the company and me thieves, but he says you are a thief too."

With that I got a water meter and a wrench and, pulling the collector along in tow, made straight for Mr. Blank's house. Here I tried to show him how a water meter is made and how it cannot possibly register more water than is actually used. He refused to understand on the grounds that he was not a mechanic and that therefore he would still believe the meter crooked and the entire company a thieving proposition.

Another customer of the same type was the man who objected to having his meter tested on the grounds that the juice we used in testing would be registered on his meter.

I am glad to say these cases are exceptional. However, they are not exaggerated. They have all occurred and many more like them. It is our policy to be nice to this kind of a consumer and show him even more attention than one who is satisfied, for some day we hope to succeed in winning his friendship.

At the present time there is less cause for grievance on the part of the consumer than in the past, for recent legislation has provided a very capable railroad commission before which all matters pertaining to the regulation of public service corporations can be brought for adjustment. If a consumer thinks he is being discriminated against, or is being charged unjustly, he has but to present his case to the commission and a just and speedy decision will be rendered. This has done a great deal toward assuring the public that the policy of a public service corporation is to be just and fair.

Concentrated effort on the part of all employees in all departments is the only thing that will bring about the desired result—service. The counter men, meter men and collectors should be carefully chosen by the company for its own protection, as well as the fact that the service and the consumers demand and are entitled to servants who are gentlemen. Dealing with the public is entirely a question of personality. It does not matter what you have to sell or what branch you are in, a grouch or a "fresh guy" has no place in the business.

Get the spirit of the game, have a feeling of responsibility in your particular line of work and always bear in mind that service, quick action and courtesy are the real things that count and for which we must continually strive.

In explanations to customers be frank. Make the question as plain as possible. Electricity is a mystery and its terms are Greek to the average consumer, so do not permit yourself to still further obscure the subject. Do not make the mistake of trying to clothe your conversation with a lot of technical language in an effort to impress upon the customer that you know what you are talking about. He does not, and will only become more confused and dissatisfied by your efforts.

Get down to earth and talk dollars and cents and sense, and talk it in a polite manner.

And above all things don't forget that little things count. For instance; a consumer phoned to a certain district office and informed the clerk that one of his service wires had sagged until it was within a dangerous distance from the sidewalk. A lineman was at once dispatched to the scene and when he arrived he found that it was a telephone line and not an electric light service. He immediately turned his horse around and returned to his other work, forgetting his real duty, which was to render a report to the office and also notify the telephone company of the trouble to their wire. The result was that the consumer waited several days for the repairs to be made and, when nothing was done toward fixing the trouble, he blamed the light company for negligence. It is not up to us to handle telephone wirees, but it is most certainly up to us to satisfy our consumers, and the fact that a consumer does not know the difference between the two kinds of wires does not excuse us from setting the trouble right with him.

The ignorance most people have of all electrical machinery is another handicap in our efforts to familiarize them with service. Every employee should welcome the opportunity to explain the workings of the system to interested persons. One evening I was escorting a party of friends through a power house explaining the working of the place, when suddenly a bunch of trouble hit us. Lines went down, fuses were blowing, pop valves were blowing off, men were running here and there, and everybody was hot on the job trying their best to resume service. The visitors stood quietly by until things were again running very smoothly, and then they asked to be told all that had happened. The explanations were made and for the first time they were brought to realize what it means to give service.

"You people certainly do work when things go wrong," one of them exclaimed, "I'll never complain again when my lights go out."

But that is just what we do not wish. We welcome complaints when the service goes wrong, for that will spur us to greater effort and tend to make a greater improvement in service.

Big Corporation Floated to Give Farmers Long Time Loans on Easy Terms

Long time loans to California farmers on easy terms is the object of a "credit corporation" which opened for business in San Francisco the first of this month. Its eleven directors are prominent business and professional men of San Francisco and other California cities. In addition to these directors it has behind it an advisory committee of 50, of whom 39 are bankers.

The corporation, it was announced, will make ten-year loans to farmers, which, however, the farmers may have the option of paying back any time before the loan expires. The money for the loans will be raised by issuing bonds against the mortgages and the interest which the farmer has to pay will depend upon the price received for these bonds. In no circumstances, however, will the loaning company charge the farmers more than 2 per cent above what it has to pay for the money which it loans him.

This system, it was said, has prevailed for many years in Europe and the directors of the corporation assert that the bonds issued abroad against agricultural mortgage loans have a better sale than national bonds.

Boyhood Recollections of Inventor's Work With the First Horseless Carriage

By C. B. TURPIN

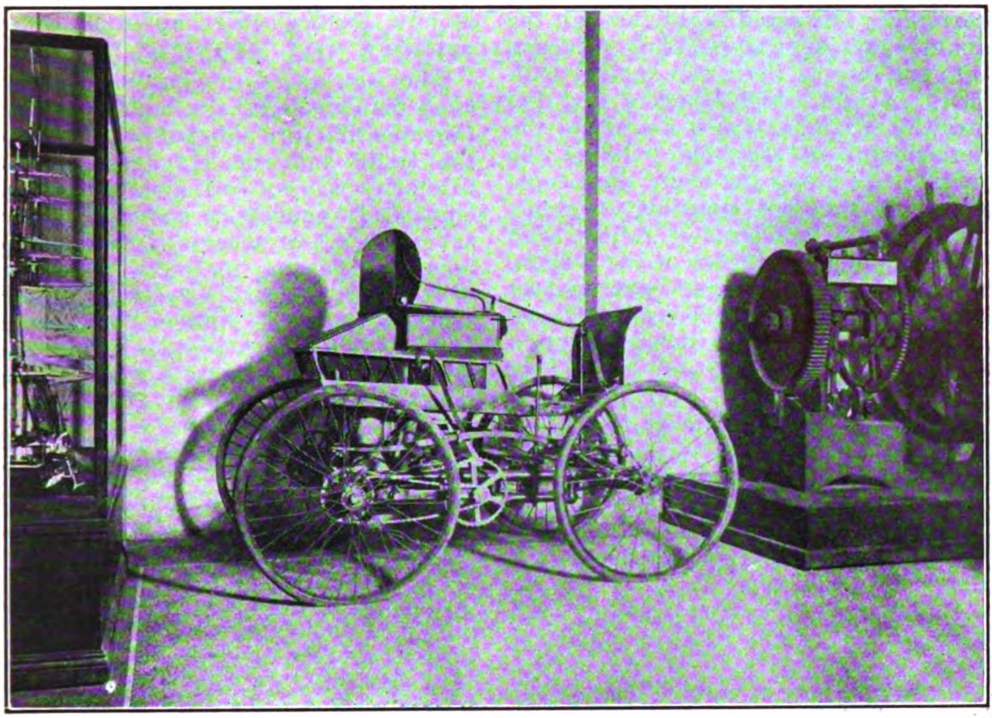
(Mr. Turpin, author of this article, is a former member of the force of the Fresno office of our company. He was born and raised in Kokomo, Indiana, the birthplace of the first gasoline automobile, and as a boy watched the early endeavors of the inventor with the greatest of youthful interest. The remarkable progress made in adapting the automobile to every form of modern usage hence has made a greater impression upon Mr. Turpin than upon most of us.—Editor.)

IN THE present rapidly changing times it is nothing uncommon to see a fad or fancy come and go, leaving very little of an impression behind it; to see an idea or an invention grow and in so many cases explode and be forgotten. It was thus with the "Telepost" apparatus which was capable of sending telegraphic communication at the rate of one thousand words a minute, using the static current on the line rather than the magnetic push and pull of the magnet. And so with many other inventions. But one seldom has the opportunity to see an invention in the course of its development that revolutionized so completely the commercial and social conditions in almost every phase of life, as the automobile and its adaption to almost every field of endeavor.

For many years I lived within a block and a half of the little machine shop in Kokomo, Indiana, where the first gasoline automobile was built. I have seen it pushed from and into the shop by a dozen boys, myself included, when the inventor, Elwood Haynes, undertook to make the machine run for a few yards. As I remember it, the first running model was made in the old Riverside Machine Shops, then conducted by Elmer and Edgar Apperson. When the vehicle had finally been assembled all of the mechanics were skeptical of its success, except Mr. Haynes and he alone had faith in his work. His assistants were afraid to crank the thing, in order to start it, having the fear that it would run away in the town and smash things up generally. The motive power was obtained from a one horsepower, two cycle gasoline upright engine capable of attaining a speed of from six to seven miles an hour. At that time we considered this immense. To give an idea of the remarkable development since that time, the original motor weighed 180 pounds while at the present time an aeroplane motor of the same weight readily gives 40 horsepower.

I remember well one of its first successful trips. The mechanics were afraid to start it in town so decided to hook it to a dray and take it three miles into the country where they knew of a straight stretch of good road. The engine was started and the machine was run back to town successfully, much to the delight and enthusiasm of the builders as well as the townspeople. Before this, however, there had been many unsuccessful attempts on the part of Mr. Haynes to make his machine go, and we as boys would leap for joy when the news was spread around that Mr. Haynes was ready to make another attempt. We of course would always be on hand to witness the trial and to aid the inventor in shoving it around. Oftentimes when he thought the thing ready to go he would start the engine, but after a few chugs and puffs it would stop. Mr. Haynes then would crawl under the machine and work and tinker with the motor in an effort to make it move. The result generally was that we were called upon to push it back into the shop, where it would stay until Mr. Haynes was ready to make another attempt to start it.

Of course, among the townspeople,



Original Automobile of Elwood Haynes now on Exhibition at the Smithsonian Institution, United States National Museum, Washington, D. C. The Machine Bears the Following Inscription: "Gasoline Automobile Built by Elwood Haynes in Kokomo, Ind., 1893-1894. Successful Trial Trip Made at a Speed of Six or Seven Miles per Hour, July 4th, 1894. Gift of Elwood Haynes, 1904."

Mr. Haynes was generally regarded as a fool. People said he was crazy and that his invention could never amount to anything. However, he was undaunted in the face of all criticism and it made no difference to him whether or not the public agreed with his ideas. He knew what he wanted to do and with the assistance of the Apperson Brothers, in the carrying out of his plans, he successfully brought the machine through its trial spin stage and soon perfected it so that it could be depended upon to make runs of several miles in length. This much accomplished, Mr. Haynes set about to make the machine more serviceable and soon a little seat was rigged up where passengers could ride without being spattered and begrimed with oil, soot and grease. The vehicle now was a very proud affair. The uncertainty with which it was first received began to disappear. It was hailed as the horseless carriage and the newspapers began to give it space.

I have here clippings of Kokomo and Peru papers commenting upon a trip made between those places. The distance is eighteen miles and it took three hours to go from one city to the other, thus making an average of six miles an hour. What the press and public thought of such a performance in those days and the peculiar expressions then had for the machine and its different parts, is shown by the following newspaper articles which I cut out and pasted in a scrap book at the time.

The Kokomo Tribune wrote:

"AN OBJECT OF ADMIRATION"

"The horseless carriage of the Haynes-Apperson Co. Captivates the descendants"

"Wednesday evening the Apperson Brothers took a little whirl over to Peru in their three-seated **horseless**

carriage. The **rapid flight** through the country across the babbling Wabash into the city of Peru, the ancient bailiwick of Old Chief Godfrey and the stealthy Miami's, was a marvel to the descendants of the bold tribe of the forest. All along the route the people **gazed** at the **fast speeding** machine, and actually wondered if Edgar, who was **handling the levers** of the **wagon,** was old Gabriel who had come to toot his horn. As the Peruvians gathered around they expressed their admiration in the language of Wang Foo Choo, who said:

"Melican man him travel bully,"
"Car no pushee, car no pullee,"
"No steam boiler in him bellee,"
"Alle samee go like hellee."

Of its appearance on the streets the Peru Chronicle says:

Haynes and Apperson came up from Kokomo last night in their horseless carriage, leaving there at five o'clock and arriving here at eight. The vehicle is propelled by a **gasoline apparatus concealed** in the body. It is capable of carrying six people. The body was manufactured by Sullivan and Eagle of this city, and the patentee is Mr. Haynes, an inventive genius of Kokomo. The **horseless conveyance** came up Third Street at a **high rate of speed** and rounding the corner stopped at the Hendrick's drug store, where a large crowd soon gathered to see it. Later it was started up Broadway and **guided into** Greve's livery stable where another large crowd collected to examine the strange vehicle. To all appearances Mr. Haynes' **invention is a success."**

The experiences of Mr. Haynes traveling in his new vehicle were numerous and how he was arrested in New York for frightening the horses on the streets, together with other strange and amusing incidents, is now history well known to every autoist.

The success of the machine having been demonstrated the builders began the manufacture of automobiles for the trade and the Haynes-Apperson Company was formed, making the celebrated Haynes-Apperson car. After several years of success, differences of opinion regarding mechanical features of the car caused a split and Mr. Haynes and the Apperson Brothers separated, forming companies for the manufacture of cars which now bear their names.

Whenever a large magnificent six-cylinder machine glides noiselessly by, I cannot fail to compare the changes a few short years have made. Looking at the automobile of today and the part it is playing in the every day life of the world, it does not seem possible that it is the outgrowth of the noisy, greasy, patched-up little vehicle that I as a boy used to shove through the streets of Kokomo.

The achievements of science are great. The perfection of the wireless telegraph and telephone, and a single telegraph wire quadruplexed so that eight operators can work the same wire between long distance points at the same time telephonic communication is being held over it, are wonderful accomplishments, but upon me they have not made as great an impression as the development of the automobile. The transformation of the auto vehicle has been marvelous and as one closes his eyes and contemplates the dizzy whirr of motors in aeroplanes that have just succeeded in turning somersaults in the air, the roar of immense tractors, trucks, the hundred mile an hour racing demon, the luxurious depot-wagon, the runabout and touring car, one can truly exclaim, "What hath God wrought!"

Pointers for Beginners in Operation of Electric Pumping Plants

---

By C. L. EASTON, Electrical Superintendent, Bakersfield District

THERE have been a vast number of motors installed on isolated plants throughout the great San Joaquin Valley in the past year and a half and verbal instructions have been given to consumers and operators of these motors. This is not altogether a very satisfactory method of instructing an inexperienced party, as ofttime the beginner becomes confused when receiving a number of verbal instructions of "what to do" and "how to operate" his plant. I think it well, therefore, to print in the columns of our magazine a few suggestions and instructions pertaining to the operation of an electric motor and equipment.

On all motor installations made by the San Joaquin Light and Power Corporation there is a set of primary fuses installed on each bank of transformers. This set of fuses is for the protection of the transformers and great care must be exercised to use the proper size of fuse. The fuse may be secured from any agency of the San Joaquin Light and Power Corporation.

On most all 6600 volt primary fuse poles a platform is installed and a fuse handle is furnished so that the operator is not required to get closer than four feet to any primary fuse. To remove the fuse holders the operator must screw the fuse handle firmly into the insulator on the fuse holder, raise the same up about four inches and thus clear the contacts.

To replace the fuse wire, the operator will securely wrap the fuse on contact wires, pass the fuse through the tube and replace corks in each end. The fuse holder is replaced in the clip insulators in reverse method of removing same. During this entire operation the operator should not get closer than four feet to any hot wires.

In nearly every case the secondary fuses located on the operating panel have a switch installed so that when opened will permit the operator to change fuses with every degree of safety. Where the fuses are installed ahead of the switch the operator is to handle only one fuse at a time and should be very careful not to touch two phases at the same time.

Where overload relay coils are used they are automatically reset and are ready for operation when voltage is on the line.

When desirous of working on secondary equipment the operator should pull the secondary switch that is located on the panel. This will always protect any one working on the motor, auto starter, or fuse from an electric shock.

The operation of a plant is simple and with a clear understanding of all the apparatus there should be no cause whatever for trouble.

Transformer Primary Fuse Table
2300 Volt Primary

Size of Transformer in K. W.	Amps for Lights	Amps for Motors
1	1	1
2	1	2
3	2	3
4	2	5
5	3	5
7½	5	10
10	5	10
15	10	15
20	10	20
25	15	20
30	15	20
50	30	30

6600 Volt Primary

Size of Transformer in K. W.	Amps for Lights	Amps for Motors
1	½	½
2	½	½
3	½	1
4	1	1
5	1	2
7½	1	2
10	2	3
15	3	5
20	3	5
25	5	5
30	5	10
50	10	15

For the protection of the secondary wiring, motor and equipment there is a set of fuses installed on the operating panel and sizes used for both starting and running are given in the following table:

Size of Motor in H. P.	200 Volt Fuse in Amps	400 Volt Fuse in Amps
1	20	10
2	20	10
3	40	20
4	40	20
5	40	20
7½	60	30
10	90	50
15	120	60
20	150	80

Where motors are equipped with overload relay and low voltage coil, the overload relay coils should be set by the following table:

Size of Motor in H. P.	200 Volts Amps	400 Volts Amps
1	5	3
2	8	5
3	10	10
4	15	10
5	20	10
7½	25	15
10	35	20
15	50	25
20	65	35
25	80	40
30	95	50
35	110	55
40	125	60
50	150	75

All motors are provided with suitable oil wells and ring for carrying the oil over the shaft and bearings, and the operator should be very careful to see that the rings are free and running when the motor is working. The air gap or clearance between the rotor and stator is very small, and great care should be exercised by the operator to keep all water, grit, oil, etc., away from the stator and the rotor. It is also advisable to keep a close watch of the bearings and not let them wear down so that the rotor and stator will come in contact, as this ofttimes results in a burned out motor. A spare set of bearings can be purchased from the manufacturers of any motor at a very nominal sum and can be readily changed when necessary.

We have a few small motors which are at present starting direct from the line without an auto starter. Motors started in this manner should not have a load, but full load can be put on as soon as the motor is up to speed. There is an excessive flow of current when starting a motor in this manner.

We have installed on all larger motors an auto starter, which acts as a transformer to cut down the voltage of the motor and also reduces the excessive flow of current. On nearly all auto starters there are three positions, "Off," "Starting," "Running." When starting the motor the auto starter lever should be quickly thrown from "Off" to "Starting" position. The operator should be sure that the contacts are firmly made and remain on starting point only long enough for the motor to come up to speed, which usually requires only a few seconds. Then the lever should be thrown quickly to the "Running" point. Should the motor have a heavy load to start the operator must have some one to assist in starting the plant. The auto starter should never be left permanently on the starting point as the excessive flow of current is liable to burn out the coils of the starter or motor. When the auto starter lever is on the "Running" position the coils of the starter are cut out and the motor gets current direct from the line at full voltage.

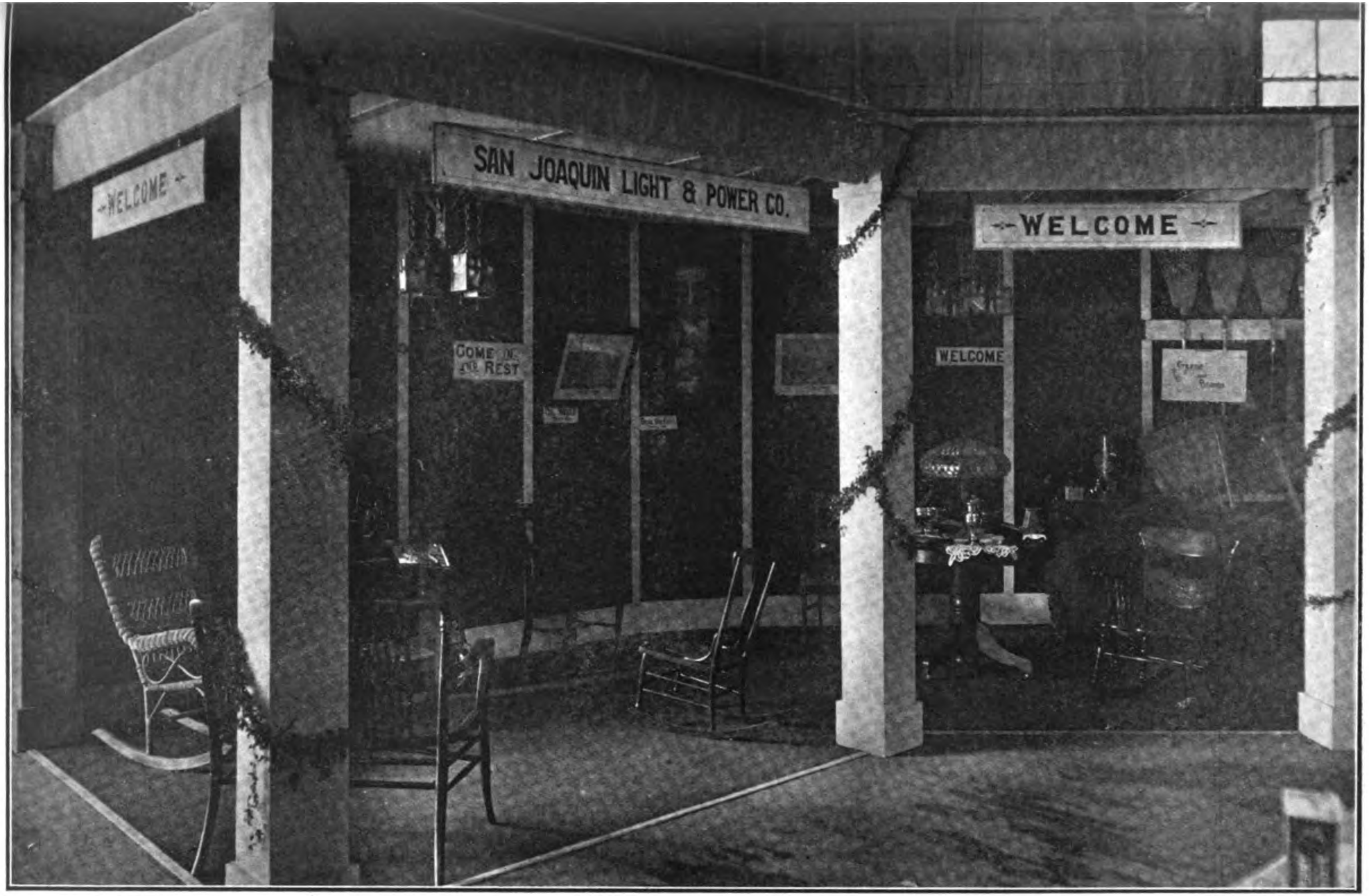


Exhibit of the San Joaquin Light and Power Corporation at the Fresno District Fair—A Rest Room, Equipped with Electrical Conveniences, which the Public was Invited to Enjoy

1913 Fair of Fresno Agricultural Association Made Record Breaking Success

THE seventh annual district fair, held in Fresno September 30th to October 4th, under the auspices of the Fresno County Agricultural Association was unquestionably one of the greatest fairs ever held in the San Joaquin Valley. All attendance records were broken and as the result the association cleared a handsome profit, which is to be used in permanent improvements and increasing facilities to provide for larger and better fairs in the future.

The fair served its purpose admirably and the multitudinous products of Fresno County as well as offerings from neighboring counties were displayed to the best of advantage. The exhibits were of high quality in every line of industry and excited very favorable comment from the judges, who pronounced the ribbon winners on a par with the leading displays at the recent state fair.

Competition was keen and in the horticultural and agricultural displays the best that the county affords was brought out. Interest was stimulated in the machinery and pumping plant exhibits as the result of the past dry seasons and the best display in the history of the association was made. The exhibits of dairy stock, beef stock, hogs, horses and other animal classes, while not as numerous as desired, were of high quality and attracted an unusual amount of interest. The poultry display was the finest ever made at the fair and provoked much keen competition.

The oil and minerals department made an especially creditable showing of these important resources. A committee of oil men from Coalinga were in attendance throughout the fair and did a valuable work in spreading information about their district. The interest awakened in the mining department gives assurance that in future fairs more elaborate and exhaustive exhibits will be made. During the coming year efforts will be directed to this end and it is expected that the mining men will lend their assistance in procuring a collection of specimens typical of their industry within the county.

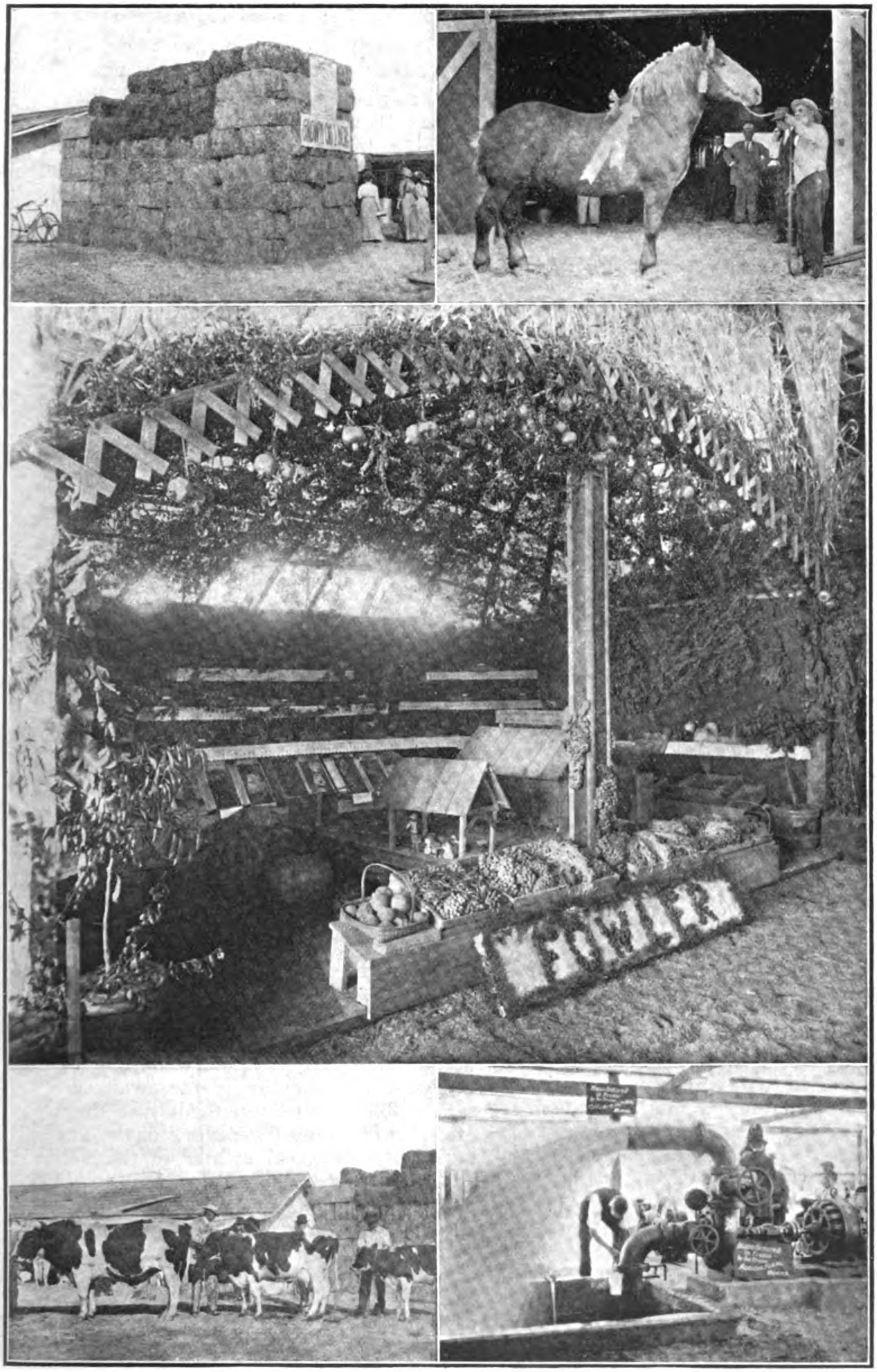
The fair management provided a popular feature in the competition between the various women's organizations of the county. Practically the entire second floor of the pavilion was devoted to this purpose. Many dainty booths were installed and made a wonderful display of the handiwork and culinary ability of their owners. The scientific baby show also was a very satisfactory feature.

A department in which much interest centered was the automobile display where valuable information was obtained from the large exhibit of the latest model pleasure cars and motor trucks.

From the viewpoint of the amusement seeking public the fair was all that could be desired. The management made an especial effort to secure thrilling attractions and clean shows, and the record breaking attendance bespeaks the success of its endeavors. An excellent race program for harness and running horses and automobiles provided the speed thrills, while sensational open air exhibitions of daring satisfied the demand for the spectacular.

A feature of the fair was "Governor's Day," the closing day, when Governor Hiram Johnson accompanied by Mayor James Rolph and party of San Francisco were the guests of the association. All records for attendance were broken. People came from all over the valley and it was estimated that 22,000 persons passed through the gates on that day.

Much credit has been given the fair association for the success of the meeting and the high standard maintained throughout.



Prize Winning Exhibits at the Fresno District Fair

San Joaquin Light & Power Magazine

Published in the Interest of the Consumers and Employees of the San Joaquin Light & Power Corporation.

I. W. ALEXANDER, Editor and Manager

Published by the San Joaquin Light & Power Corporation, Fresno, California.

Advertising rates upon application.
Subscription, fifty cents a year.
All communications should be addressed San Joaquin Light & Power Magazine, Fresno, Cal.

Entered as second-class matter February 20, 1913, at the post office at Fresno, California, under the Act of March 3, 1879.

Vol. I OCTOBER No. 10

Memorable Advance During Month of October

The month of October of the present year will be looked upon as a memorable month in the history of the achievements of the San Joaquin Light and Power Corporation. It has seen the closing up of the "East Sixty" and the actual realization and operation of the famous loop system of transmission encircling the valley; it has seen the driving of the last foot of tunnel in the Tule River hydroelectric plant, and it has seen the installation of a third generating unit in the Bakersfield steam plant.

By the completion of the high tension transmission line between Strathmore and Famosa, and the placing in service of the substations at these points, the operating system is given the shape of a complete ring, any section of which can be cut out without interfering with the service over the remainder of the system. This also increases the carrying capacity of the system by having a double transmission circuit between the generating sources.

"We saw the sun set through Tunnel 26 on October 3," reported D. L. Wishon, engineer in charge of the Tule River operations, and this fact marked the beginning of the final step in the completion of that project. Work on the power house is now being rushed with all possible haste and before the new year is ushered in, this plant will be connected up with the system.

The new unit in the Bakersfield Steam Plant consists of a 5000 K. W. Allis-Chalmers steam turbine and generator which has increased the capacity of the plant to 12,500 K. W.

All of these are proud accomplishments in this company's efforts for increased and more efficient service.

That Swelling Stream of Homeseekers

The railroad companies have estimated that almost 60,000 colonists were brought to California by this season's "low-rate-from-the-East" excursions. Each year this number increases and the entire state is feeling the effect of the influx. Los Angeles and the country adjacent is fortunate in being able to bid the newcomers their initial welcome and has hence gained the greatest benefit. But the San Joaquin Valley is fortunate in having the southland for its neighbor. The country south of the Tehachapi has flourished and grown at such a remarkable pace that the valuations on its lands are now no longer within the reach of many buyers of modern circumstances. The class which demands good values at low prices, and have the wisdom to know what they want when they see it, are finding their way into the San Joaquin Valley. Better lands at cheaper prices are the attraction and the Los Angeles dealers, who no longer are able to offer the article in their locality, are turning to the nearest source of supply to fill the demand. The San Joaquin Valley, being in possession of the goods, was certain to be called upon to deliver them and this is being done every day. The activity of the real estater in the valley is increasing, virgin tracts are changing hands, and as one travels through the different counties the great force of colonization and settlement can be seen at work, changing barren fields into productive farms and adding thousands upon thousands of dollars in wealth to the valley.

Petroleum is the Banner Product of State

Up to but a little while ago gold was by far the most valuable annual output from California's mineral resources, but it is not so now. From an advance press bulletin giving the statistics from the report of the State Mining Bureau for 1912, we learn that the total value of gold taken out in that year was $19,743,478, while the petroleum loomed up to the value of $41,868,344.

Turkish Tobacco Industry Is Important

The production of Turkish tobacco in certain sections of Fresno and Tulare counties has already become an important industry, and the rapidity with which it has come into prominence is astonishing. It indicates that within a few years the great San Joaquin Valley will be known everywhere as a producer of this rare variety of tobacco. From the Dinuba Sentinel we learn that one grower in that locality expects to take off $10,000 worth of Turkish tobacco from seven acres this season, and that other growers have hopes of making an even better showing.

The American Tobacco Company introduced the industry into the valley, after first having determined that the plant can be grown successfully here. It has encouraged production by the free distribution of seed and the free dissemination of information pertaining to the culture and curing of the plant, maintaining an expert in the field for the instruction of the growers. Good prices have been paid for the crops and growers have been very liberally rewarded for their experiments. In fact it has been demonstrated that in some localities there is more profit in tobacco raising than in other branches of horticulture.

The advantages of the lesson which has been taught by the introduction of the Turkish tobacco industry are many, and credit is deserving to both those who are encouraging the new business as well as those who are the pioneers in the field. In the short space of time that attention has been given it, this industry has developed with remarkable rapidity until at the present time it involves a great sum of money annually. All how important this fact is to the producers and distributors, real value is also attached to this successful demonstration in that it is again shown that there are indeed few soil products of importance that the San Joaquin Valley is not adapted for.

Flattering Tribute Paid the Pumping Plant

We are nearly through with the "season," and may soon begin to look for the fall rains. And notwithstanding the inadequate rainfall last winter and spring, we have got through remarkably well. There is plenty of hay in this neighborhood, and dairy cattle are in pretty good shape. We owe this in large degree to the pumping plant, and there is good reason to believe that by another summer we will be still better equipped, though of course everybody is looking forward to a wet season. No matter how good the rainy season may prove, many dairymen not now the possessors of pumps will put them in, for they realize that the time to prepare for a dry year is while we are enjoying the prosperity of a wet year.—Tulare Register.

California Cotton is Given Perfect Mark

California cotton has passed the government's examination with a mark of 100, which is the highest mark possible and leads every cotton growing state in the Union. The results of an investigation of cotton conditions in the United States reported from the census bureau at Washington places Imperial Valley in the front rank, its nearest competitor being Florida, with a standing of 78. The lowest mark is 42 and is given to Oklahoma.

Eleven Hundred Gallons a Minute Output of Hanford Physician's New Plant

Dr. Felton in the foreground and Mr. Hiatt, at the doctor's plant soon after the juice was turned on.

Dr. Felton, a well known Hanford medical man, is much elated over the splendid electric pumping plant just installed on his farm holdings in the Corcoran district. The plant is one of the most satisfactory in the district. A No. 7 pump is harnessed to two wells and by actual measurement the pump is delivering 1100 gallons a minute. Dr. Felton took the keenest interest in the installation of the plant. He was on the job from the time the well borers began dropping tools until District Agent Bearden turned on the juice, and the above picture was taken by Mr. Bearden as the water first began to flow. With such an excellent source of water supply Dr. Felton now expects to make rapid progress in the development of his holdings.

The work of installing pumping plants in the Corcoran district is going merrily on and the latest property owner to fall in line is Mr. Stoddard Jess, of Los Angeles, who has placed an order with District Agent Bearden for a 15 horsepower motor and 6-inch pump to be put on one of his artesian wells south of Corcoran. Like all artesian well owners, Mr. Jess finds that these wells are not giving out as much water as they once did. Mr. Jess has purchased his plant from Mr. Greening of Tulare and the installing of the plant and the developing of the well will be done under the supervision of Mr. Bearden.

Mr. Jess is now interested in surface wells. He has come to realize that three surface wells, each one with about a 300 gallon capacity, will give him about 900 gallons and the whole plant installed will not cost him one-third as much as one artesian well.

Raising of Turkish Tobacco Now Becoming An Industry of Considerable Proportions

According to the data furnished by Secretary Hurst of the Dinuba Chamber of Commerce the acreage of Turkish tobacco planted in the San Joaquin Valley this year is about 1,000 acres. Of this acreage four-fifths is within the boundaries of Tulare County. The records show the planting of 900 acres in tracts of from five to sixty acres, while numerous tracts of from one-half to five acres have been set out for experiment only.

The growing of Turkish tobacco in the San Joaquin Valley is an interesting story. A few very small tracts were planted, more out of curiosity than for any other purpose. These first attempts were made about five years ago and the returns were so flattering that many farmers, who had not heretofore attempted to raise the leaf, took hold of the industry and the result has been an increasing amount grown each year with reasonably good success.

The planting of this particular variety of tobacco began in the season of 1909 when 7,000 pounds were marketed. In 1910 the crop was 15,000 pounds, in 1911 it was 45,000 pounds, last year 150,000 pounds, and this year, if nothing unforeseen happens, the output should be almost 600,000 pounds.

Last season the crop in general was not of the highest quality and the prices paid ranged from 35 cents to 55 cents a pound. Tobacco of better quality of course brings higher prices. However, figuring the present season's crop of practically 600,000 pounds on the basis of the average of last season's prices, the gross returns will be $270,000. Conditions throughout this locality are very favorable for the culture of this plant and as the growers become more experienced, the quality is certain to increase. Much of the acreage has been planted as a side issue, the growers utilizing the space between trees in their orchards to experiment with the tobacco. There are, however, many large tracts devoted entirely to the plant.

A yield of 800 pounds to the acre is considered an especially good crop while anywhere from 500 to 700 pounds to the acre is a good crop.

Merced County Takes Honors at the Ghent Exposition

The county of Merced was awarded the first prize for the best scenic agricultural exhibit in the international exposition held in Ghent, Belgium. The award was a gold medal. The Merced exhibit consisted of six photographs which are the work of J. H. Thullen, assistant secretary of the Merced County Chamber of Commerce. Thullen first made the photographs, enlarged the pictures and then colored them true to nature. The pictures show a West Side dairy scene, a mammoth stack of hay, an alfalfa field, a herd of white-faced steers, a bowl of almonds and a view of Merced county's prize winning exhibit at the state fair in Sacramento in 1910.

Always With Us

I sing my rune about the prune;
To praise it is not treason.
This festive fruit tries hard to suit
And always is in season.

The melon goes, and I suppose
That higher than a steeple
Would prices reach for pear and peach;
They are not for poor people.

I hanker not for apricot
Or plum, and for good reason.
I have that boon, the festive prune,
Which always is in season.
—Exchange.

A Great Success

Mrs. A: "Did your daughter's marriage turn out well?"

Mrs. B: "Indeed it did. She is getting $600 a month alimony."

A Wise Lad

"May I—may I kiss you, dear?"
Said he.
"First I want one thing made clear,"
Said she.
"Have you ever kissed a maid before
Or tried?"
"No," he answered. She was sure
He lied.
Then with willing lips she whis-
Pered, "Well,
Yes, you may since you don't kiss
And tell."
—Boston Transcript.

Mr. Stutters: "Wr-wr-write it ju-ju-just as I s-s-say it."

Miss Stenographer: "Gee, I see my finish."

What a Difference

She was but sixteen when she wed.
Her virtues were far flung,
But when her black hair turned to red
He said, "The good dyed young."

Uneasy

"Come right in, Sambo," the farmer called out; "he won't hurt you. Don't you know a barking dog won't bite?"

"Sure, boss, Ah knows dat," replied the cautious colored man. "But Ah don't knows how soon he's going to quit barkin'."

There's a Reason

Mrs. X: "My husband told me a little while ago I could pay any price I wanted for my new fall hat."

Mrs. Y: "What had he been doing during the summer?"

The Washington Version

Mary had a little lamb—
I read it in a book.
They thought she did not need it, so
Away the lamb they took.

When Mary got it back again
From a Chicago shop,
She had to pay about two-bits
For every little chop.

"Leave me the wool at least," said she.
But echo answered, "Nay,
That part of it is tangled up
Somewhere in schedule K."
—Washington Post.

Warden: "What did that woman give the prisoner?"

Turnkey: "Only a pie she baked for him herself.

Warden: "Good heavens! Get it away from him quick before he makes a saw of it and escapes.

Acrobat: "Why is the fat man in the dumps?"

Clown: "Always doing the wrong thing."

Acrobat: "What has he done now?"

Clown: "Gave the bearded lady a razor for a birthday present."

Mickey Came Back

E. O. McCormick, vice-president and general manager of the Southern Pacific Company, paid a visit to the San Joaquin Valley the early part of the month and this was the occasion for the valley papers reprinting a story concerning the genial railroad man which had previously appeared in one of the San Francisco dailies.

Mr. McCormick was seated in his office in the Flood Building, so the story runs, when the door was suddenly and abruptly pushed open and an Irishman, hat on head and pipe in mouth, walked in.

Mr. McCormick looked up in astonishment.

"I want a pass to Fresno," said the visitor.

"Who are you?" came the indignant reply.

"Mickey Doyle, sir—Mike Doyle, one of your switchmen."

Mr. McCormick with a keen sense of the proprieties but at the same time a keener sense of humor said:

"Now, Mickey, I am not going to say that I will refuse your request, but there are certain polite forms that a man—an employee particularly—should use in asking a favor. First you should knock at the door of my office and enter only when I say 'Come in.' You should take off your hat and remove the pipe from your mouth and say 'Are you Mr. McCormick?' I would reply 'Yes, sir; who are you?' Then you should say, 'I am Mike Doyle, one of your switchmen,' and I would probably answer, 'What can I do for you, Mike?' Then you would make your request and I would be glad to do whatever was possible for you. Now you go out and come back in a little while and see if you can't do better than this time."

Mike walked slowly out and carefully closed the door. Mr. McCormick had almost forgotten the incident when about two hours later there came a gentle tap at the door.

"Come in!"

In walked Mike, very demure and respectful, hat and pipe in hand.

"I beg your pardon, sir, but are you Mr. McCormick?"

"I am," said Mr. McCormick. "Who are you?"

"I'm Mike Doyle, sir, Mickey they calls me, one of your switchmen."

"Well, well, Mickey, what can I do for you?"

"You can go to the divil, Mac! I've got a pass on the Santa Fe."

She stood beneath the mistletoe,
The maiden fair, like one enchanted;
Though naught of farming knew her beau,
He showed how kisses could be planted. —Judge.

"What state are you from?"

"Michigan."

"What's your line, automobiles or health food?"

Some Difference

The hunter had but little luck
For he was out to shoot a buck.
He shot a farmer's cow instead,
Worth fifty bucks, the farmer said.

Doing the Impossible

He talks miserably, and yet he talks well.

How can he do both?

Because he's drumming up business for an artesian company.

Wrong Store

"I want a collar," growled the man;
"Be quick! You make me sore."
"We don't keep your kind," said the clerk,
"Go to the hardware store."

Will Be Easy

Grinder: "Can't spare the money very well but I'll lend it to you if you will agree not to keep it too long."

Gayboy: "I guarantee to spend every penny of it before tomorrow morning."

No Reason To

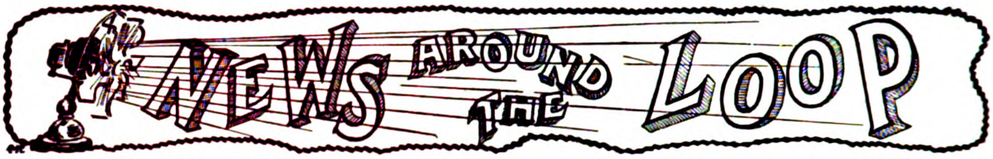
Hear about Jones?

No.

His wife learned dressmaking.

Yes?

And now Jones don't work any more.



NEWS AROUND THE LOOP

Fresno

The Fresno office was thrown into a high pitch of excitement October 14 when Miss Geneva Barrett tendered her resignation. Of course everybody said they knew why, but Miss Barrett said nothing and so nobody knew anything at all until one of her close friends, Mrs. Fred Ashley, arrived on the scene with a bunch of invitations for a shower to be given in Miss Barrett's honor the following Friday night. This lent confirmation to the rumors and in the short time at their disposal the friends of Miss Barrett endeavored to do her fitting honor. Her plans were a complete surprise. Two pretty parties were given before Saturday evening when the wedding occurred. The ceremony was quietly observed and only relatives and intimate friends attended.

The popular young lady became the bride of Mr. Roy Lear of Selma, a well known and estimable young man. They enjoyed a short trip to San Francisco and have returned to Selma to make their home.

When the news of approaching marriage was generally known Miss Barrett was virtually deluged with good wishes. She had been a member of the office force for the past three and one-half years and is deservedly popular.

Mrs. Roy Lear, nee Geneva Barrett, the Latest of the Fresno Office Force to Stand Beneath the Wedding Bell

Mrs. A. B. Carpenter had been planning an evening for several of the girls of the office force who have grown to know each other intimately through their long service in the company and have met on similar occasions in the past, but when it became known that Miss Barrett was soon to be a bride, the hostess made an effort to compliment her. A pretty surprise was sprung in the way of a rose shower. As Miss Barrett descended the stairway of the Carpenter home, after removing her wraps, she was literally covered with rose petals and bouquets of roses. The house had been prettily decorated with roses, cosmos and ferns and the table, at which places for twelve were set, was decorated in the same scheme. Although Mrs. Carpenter gave the dinner strictly for the young ladies Mr. Carpenter could not resist the temptation to remain in the midst of such a wonderful galaxy of beauty, so he ingenuously donned a white coat and officiated as the butler for the evening. Mrs. Carpenter prepared a very tasty five-course dinner and her guests affirm that Mr. Carpenter served it in a most accomplished manner. A pleasing event of the evening was the entrance to the dining room. Miss Ellithorpe sat at the piano and played a wedding march, and Miss Barrett was finally persuaded to lead the impromptu procession. Speeches of course were in order and the bride-elect was showered with dont's and advice from both the married and the unmarried.

The guests of Mrs. Carpenter were Miss Barrett, Mrs. Fred Ashley, Miss Ruth Van Buren, Miss Pearl Ellithorpe, Miss Nell King, Miss Mortimer Lamkin, Miss Lorena Babcock, Miss Mamie Harrison, Miss Nira Hickman, Mrs. E. C. Van Buren, Mrs. E. A. Lamour and Miss Winifred Fitz Gerald.

The following evening, Friday, October 17th, Mrs. Fred Ashley was the hostess at an aluminum shower in honor of Miss Barrett. Her home was prettily decorated in pink and white and everywhere were pink and white paper hearts. The same idea was carried out in the refreshments, and sandwiches and cakes were made in the shape of hearts. The bride-elect was the recipient of a very handsome kitchen set. Given courage by the fact that there were none of the sterner sex in the party, the young ladies held a mock marriage and from the meager details which have slipped their lips it is to be judged that the ceremony was "some" ceremony. It is understood that Miss Winifred Fitz Gerald was the groom, and it is said that she made a stylish appearing man in Mr. A. B. Carpenter's dress suit. Miss Ruth Van Buren was the bride and to describe her costume one would have to have the talents of the world's seventeen most popular authors. Suffice it to say that she looked charming in an old Queen Elizabeth shirt made of cheesecloth according to the latest diaphaneous style, with a blue silk waist and a cerise veil. She carried marigold flowers. Miss Nira Hickman officiated at the ring ceremony and the solemnity of the occasion was duly upheld. The young ladies pronounced the event a tremendous success. Together with a pleasing display of musical talent that followed, it has served to make Miss Barrett's departure from the ranks of single blessedness memorable in the annals of power company tradition.

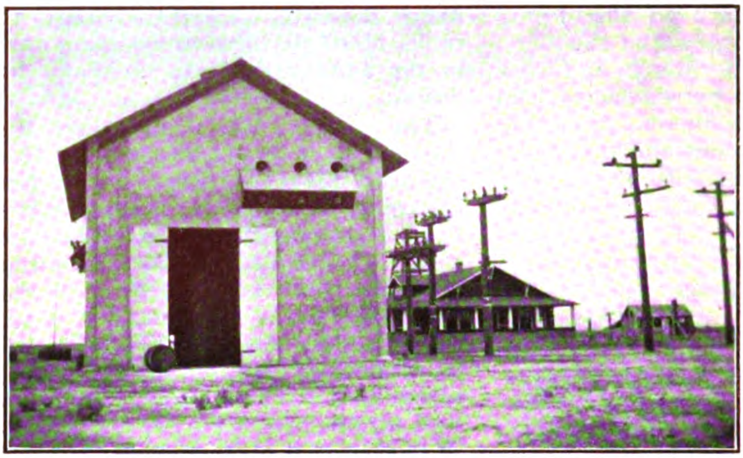
The guests of Mrs. Ashley were Miss Barrett, Miss Avis Carson, Miss Rose Osborne, Miss Ora Elwell, Miss Nira Hickman, Miss Lorena Babcock, Miss Pearl Babcock, Miss Mamie Harrison, Miss Nell King, Miss Ruth Van Buren, Miss Mortimer Lamkin, Miss Jo Purcell, Miss Pearl Ellithorpe, Miss Grace Sellers, Miss Adeline Mitchell, Miss Winifred Fitz Gerald, Mrs. A. B. Carpenter, Mrs. A. B. Lamour, Mrs. E. C. Van Buren, Mrs. Lily Price, Mrs. Nell Brownson and Mrs. Charles Ashley.

Another interesting romance concerns F. B. Merrill. Saturday, October 11th, he requested permission to be excused from work for the afternoon and accompanied by Miss Laura Landry, the young lady of his choice, he took an afternoon train for Hanford where the wedding ceremony was performed. The young couple returned to Fresno on the evening train and are now comfortably domiciled in the Merrill residence on Illinois street. The young couple kept their plans to themselves and no one was apprised of the secret. The news leaked out in the office during the week and Mr. Merrill has been receiving the congratulations of his friends ever since. Mrs. Merrill is a charming young lady and has many friends in Fresno who are glad to know of her happy marriage.

H. D. Orr, who has been operator at the Henrietta sub-station for some time past, has been transferred to Strathmore and is now in charge of that new station. C. H. Pinney, former line patrolman and relief operator, is now in charge of the Henrietta station.

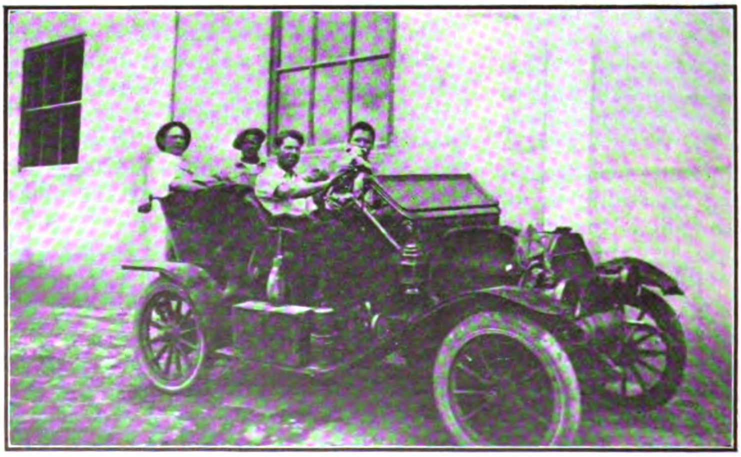
E. P. Smith enjoyed his vacation the early part of the month and accompanied by Mrs. Smith spent the time in San Francisco.

Mrs. C. I. Cook was absent from her desk for some time during the month owing to a severe illness which originated from an ulcerated tooth. Her illness was sufficiently serious to com-



The Sub-station at Henrietta, the Main Switching and Test Station on the West Side

Mrs. H. D. Orr and the Sub-station Pets. Mrs. Orr has been of Much Assistance to the Operating Department in the Work over the Telephone



H. McKenzie, Sub-station Inspector and Maintenance Man, at the Wheel. P. McCorkle at His Left. H. D. Orr, Formerly Operator at Henrietta and now Stationed at Strathmore, is in the Rear Seat at the Left of F. K. Jones, Formerly District Agent at Lemoore pel her to enter a sanitarium. Miss Howard filled the vacancy in the purchasing department during her absence.

Mrs. E. Arrington has entered the employ of the company to fill the vacancy caused by the resignation of Miss Geneva Barrett.

The many friends of Bob Bonney, the genial shop foreman, will be glad to know of the continued improvement of Mrs. Bonney, who is now recovering after a long siege of illness.

L. Stevens enjoyed his vacation the early part of the month. He spent his time off duty in Fresno.

The world series attracted the usual amount of interest again this year and of course Carp, Cutter, Eddie Hansen and the rest of the fans picked the winner, only they would have liked to see New York grab the bunting.

Mark Webster of the construction department, after completing the work of enlarging the sub-station in the Midway fields, came into Fresno to enjoy his vacation. He spent the time off duty getting acquainted with his family again.

J. K. Jones has entered the employ of the company, in the distribution department of the Fresno office, taking the place of C. B. Turpin, who recently resigned.

Tuesday, October 21st, was Edison Day and the occasion was celebrated in an informal manner throughout the system. This day was the thirty-fourth anniversary of the incandescent lamp and the fact was impressed upon the general public by newspaper advertisements and special window displays. Very attractive window decorations and large three-quarter size pictures of Mr. Edison were received from the General Electric Company, which attracted much attention every place shown.

Chief Engineer G. O. Newman was in Fresno from Los Angeles the early part of the month.

F. D. Fagan, in charge of the lighting department of the San Francisco branch of the General Electric Company, spent a day in Fresno last month making arrangements locally for the observance of Edison Day.

C. E. Barton, who has been with D. L. Wishon in the construction of the Tule River plant for the past six years, was in Fresno during the month for a few days.

Charlie Easton, electrical superintendent of the Southern District, was in Fresno for a few days the early part of the month while on his way from Bakersfield to Crane Valley.

W. E. Durfey and J. M. Buswell made a trip over a portion of the system during the month and spent some time in Coalinga.

R. E. Dunkle has been added to the staff of load dispatchers in the Fresno office, the work now being divided into three eight-hour shifts.

A. D. Newland, one of the operators at the San Joaquin Power House, was in Fresno for a few days during the month.

Superintendent of Operation Crawford made a trip to Power House No. 3 October 9th to investigate the damage done to generator No. 1 which was hit during a recent lightning storm.

Dispatcher Moore and Superintendent of Construction Burgess made a trip to the San Joaquin and No. 3 power houses during the month.

Elmer Gates, superintendent of the power houses on the San Joaquin, and Mrs. Gates made a trip to Fresno during the month, having been summoned by the death of the latter's father.

General Superintendent Peart was in San Francisco several days during the month attending the meeting of the Conductive Interference Committee. Mr. Peart also made a trip to Bakersfield to inspect the addition to the steam plant which was tied into the system Saturday, October 11th.

E. L. Bowler, formerly in the meter department in the Bakersfield district, from which position he resigned to accept a place with the Winslow Light and Power Company in Arizona, has returned to California and is again in the employ of the company in the meter department of the Fresno office.

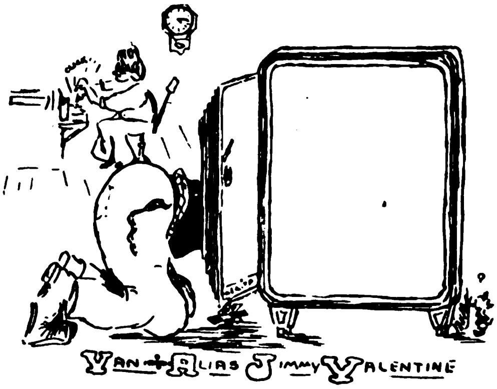
Word has reached here of the arrival in the household of Mr. and Mrs. F. D. Fagan in Berkeley, of a daughter. The little lady made her debut October 17th, almost on Edison Day.

Guy O'Melveny, of the draughting department, returned the first of the month from a vacation of several months duration which was spent with relatives in Oregon. Mr. and Mrs. O'Melveny and children enjoyed the outing immensely and they are again comfortably domiciled in Fresno for the winter.

Assistant General Manager A. E. Wishon accompanied by Cashier Van Buren made a trip to the coast during the month, inspecting the different district offices in that locality.

C. C. Dickson, who has been stationed at Corcoran for some time past, was in Fresno over several week-ends during the month.

Ralph Bearden, the genial district agent at Corcoran, spend a week-end in Fresno during the month. Ralph has entirely recovered from his recent illness and is now as busy as he can be with the affairs in his district.



One of the Company Pen Wielder's Impression of Cashier Van Buren going into the Safe after the Filthy Lucre

Engineer Emil Newman was in Fresno during the month while on a regular trip to the North Fork.

George Beaty came up from the La Hacienda ranch a couple of times during the month.

Raleigh Casad, the district agent at Merced, was in Fresno several times during the month on business matters.

Traveling Auditor E. S. Erwin reported into the office in person several times during the month.

General Agent E. D. Farrow, Jr., spent the greater part of the month in the southern territory in Kern County. He was one of the guests at the recent social affair of the San Joaquin Light and Power Social Club which is composed of employees of the Bakersfield office.

District Agent Ernest Newlin made a trip to Clovis during the month to confer with Wm. Coddington Edison Otts, the company's representative in that thriving community. Mr. Otts has several important matters pertaining to street lighting pending with the city fathers of Clovis and is much interested in providing the city with a very effective electric arc system.

Fletcher A. Easton, the district agent at Selma, was in the Fresno office several times during the month.

Lou Morley of the printing department resigned his position the first of the month.

General Superintendent L. N. Peart was summoned to Visalia during the month to give expert testimony in a suit pending before the courts of Tulare County arising out of the construction of the Big Creek power line.

Charlie McCardle was up from Dinuba during the month on business with Assistant General Manager Walthall.

Willard C. Johnson and Louis Somers of the Westinghouse Electric and Manufacturing Company were visitors in Fresno during the early part of the month.

Frank Ridge, assistant to District Agent Newlin, was in charge of the company's booth at the Fresno District Fair.

Madera

A social event in Madera during the past month was the marriage of Miss Margaret Freeland to Clarence Rowe Duncan, of the force of the Madera office. The wedding was solemnized Friday evening, October 10th, at the home of the bride's parents and was witnessed by two hundred friends of the young people. Rev. Miller, pastor of the First Methodist Church of San Jose and a cousin of the bride, pronounced the ceremony. The bride was met at the altar by the groom and the best man, Eldridge Westfall, and was given into the keeping of the groom by her father. The wedding march was played by Mrs. George H. Bernhard and was preceded by a vocal solo by Mrs. George Devoir of Fresno and a violin obligato by Mrs. Harvey. The bride was attended by Miss Margaret as maid of honor and Miss Jessie Rice and Miss Irene Tirza Bryan as bridesmaids. The young couple departed immediately on a honeymoon trip spent in the southern part of the state and returned to make their home in Madera, where their friends are a legion. The groom is well known in the valley districts and has been the recipient of a veritable flood of congratulations.

Bakersfield

The San Joaquin Light and Power Social Club held its first event of the season Saturday evening, October 11th. The entertainment was in the nature of a dancing party and was given at the Beardsley Pavilion. About seventy-five employees and their friends were in attendance and the evening was most delightfully spent. A four-piece orchestra furnished the music, which was exceptionally good and added greatly to the enjoyment of the evening. The young ladies of the club furnished the refreshments and there was cake and coffee and many other delicious dainties in abundance. In fact the girls were so generous that there was considerable cake untouched and the officers of the club thoughtfully presented the same to the Children's Shelter where the little tots enjoyed it with their Sunday dinner.

The evening will always be remembered by those in attendance, but there were several incidents which tended to make it particularly eventful. The strenuous efforts of Electrical Superintendent Charlie Easton to dance the "Paul Jones" without relinquishing his charming partner provoked considerable comment from the rest of the boys who wanted to dance with the pretty young lady, and also from the girls, who were equally as anxious to trip the boards with sprightly Charlie. However, Charlie hung out and won his case, but some of the boys say it would have been different had Mrs. Easton been there. It is said that a man always has a kick coming and that now appears to be true of Charlie. He was compelled to leave before the refreshments were served and even though he had the pick of the dancers, Charlie feels that he did not get full value received. Ace Meudell again distinguished himself by consuming more coffee and cake than any of those present. In fact Ace scorned the cup and used a big soup bowl which was refilled several times. The coffee put lots of "pep" into the genial gas superintendent and he was voted one of the most graceful dancers on the floor.

The members of the social club have made an envious reputation as entertainers and their parties are always anticipated with the greatest of pleasure. The first affair is the forerunner of a number to be given this season. The next event will be during the holiday season and will be held in one of the halls in Bakersfield.

Those who enjoyed the evening were Mr. and Mrs. Harry Jastro, Mr. and Mrs. O. M. Simpson, Mr. and Mrs. Lou Johnson, Mr. and Mrs. J. R. McGuire, Mr. and Mrs. Chas. Bare, Mr. and Mrs. Bert Elias, Mr. and Mrs. Lester Stoll, Mr. and Mrs. K. S. Littlejohn, Mr. and Mrs. W. F. Tyler, Mrs. Best, Mrs. L. Swartz, Miss Eva Smith, Miss Edith Parker, Miss Rose McGeary, Miss Nellie Thompson, Miss Thea Alstetter, Miss Dena Pesante, Miss Mary Meudell, Miss Myrtle Meudell, Miss Andrews, Miss Vivian Willis, Miss Hulda Rauhut, Miss Gibson, Miss Cloris Bender, Miss Corine Bender, Miss Florence Barr, Miss Mildred McClure, D. G. Ogle, Powell Catlett, Arthur Battle, Frank Bishop, Fletcher A. Easton of Selma, A. Renfro, S. Young, M. McMillian, Harry Dotto, E. B. Osborn, Tom Martin, Warren Ten Eycke, A. Y. Meudell, C. L. Easton, R. White, P. J. Kean, O. A. Walthall, E. D. Farrow, Jr., Willard C. Johnson, R. J. Carlisle, Bert Walford, A. Neal Jacobs, H. P. Bender, W. M. Harbison, Wm Huppert, J. P. Ogle, R. C. Mallery, Robert Brisbane, C. L. Meddor, and J. F. Turner.

Vice-President A. C. Balch spent a day and a half in Bakersfield and sur-

Flashlight Photograph at the Opening Dance of the San Joaquin Light and Power Social Club held in Bakersfield Saturday Evening, October 11th rounding country looking over the installations and paid the salesroom a two-hour visit, being greatly interested in the manner in which the gas heaters were going out, as it was in the midst of a rush and on that particular day 52 were disposed of.

R. B. Martell, meter man, has accepted a transfer to San Luis Obispo where he will have charge of mains and services. This is a distinctive promotion for Bob and his friends are glad to hear of his advancement.

Mrs. J. E. Wilson, for the past three years stenographer in the commercial department, has resigned her position and removed to San Pedro where Mr. Wilson has accepted a position.

Miss F. Durgen has accepted a position as stenographer to take the place made vacant through the resignation of Mrs. Wilson.

Jake McGuire, former line foreman, is back again from his vacation and is now running the electric meter truck.

M. Niccolls, line foreman, is back at work after a few days indisposition.

J. H. Jonte, clerk at the steam plant, is back at his desk again after a few days illness.

O. A. Walthall, district agent at McFarland, has harkened to the call of back to the soil and purchased 40 acres in the southwest quarter of section 32, 25-25, a piece of valuable agricultural property near McFarland. His friends are curiously waiting to see if "Jum" intends to reduce his avoirdupois by manipulating the business end of a plow.

Commercial Manager Harry Jastro of the Bakersfield district was given a surprise on the evening of his birthday, Tuesday, October 14th, Mrs. Jastro having invited six or seven of his close friends to dinner. The pretty Jastro home was decorated in keeping with the spirit of Hallowe'en, electric lights inside of grotesquely carved pumpkins being the central scheme. After a very delectable dinner, dancing was enjoyed.

Chas. L. Easton, electric superintendent, enjoyed a short vacation in Fresno and the northern districts, accompanied by his wife.

The gas heater season started off with a rush on the 4th of the month, upon the arrival of a large consignment of gas heaters, and salesmen Bishop and Upson sold 150 between Saturday noon and Wednesday evening.

A. N. Jacobs, dispatcher, established a new record by connecting 43 different gas appliances as a day's work.

A. Y. Meudell, gas superintendent, is an exceedingly busy man these days as the volume of gas business brought in by the commercial department keeps genial Ace on the run figuring out estimates for furnace installations and heating devices for the large buildings in Bakersfield, which are nearly all taking on gas this winter as a heating medium.

Recent installations in the Rio Bravo country are Theodore De Chenne of Pasadena, Cal., who has installed a 10 horsepower Fairbanks-Morse motor with a 4-inch Byron-Jackson D. C. pump on his 160 acres on section 10, 28-24, and Mr. Farrington, a prominent school superintendent of Los Angeles, who has installed a 15 horsepower Fairbanks-Morse motor with a 6-inch pump on his property two miles north of Rio Bravo.

Odin Bickerdike, clerk in the accounting department, spent his annual vacation this year at Ocean Park.

Frank T. Bishop, salesman, enjoyed a two weeks' vacation hunting near Bakersfield and practicing up for the ball team. If there is anything Bishop likes to hear better than the click of the cash register it is the biff of the oaken staff against the leather pellet.

General Agent E. D. Farrow, Jr., has spent the last month in Bakersfield, McFarland and Wasco on general business.

A. B. Simpson, of the collection department, spent three days in Fresno on a visit with Earl Bowler, formerly connected with the meter department.

William Wallace, the speedy third baseman of the Bakersfield ball team, has resigned his position in the consumers department and has gone to Salinas to accept a position in the county assessor's office. Salinas is Billy's home town.

E. W. Thompson, cashier, resigned his position on September 10th, and

Garfield Gregg has been promoted from the consumers department to that of cashier.

John King was promoted from mailing clerk in the collection department to take Mr. Gregg's position in the consumers department, and N. P. Neate, collector, to mailing clerk.

A. Goodrich has accepted a position as collector.

Taft

Bailey Phillips, formerly foreman of the line crew, has taken the position of operator at the McKittrick substation.

William Huppert spent a week in Taft recently, closing up the jobs and estimates.

easier. They had fears that Bob was contemplating matrimony. And there was just and sufficient grounds for these fears. Bob is the owner of several pieces of real estate in the Midway metropolis and upon one of these he recently erected a cottage. Before departing for the seashore Bob made all arrangements for the painting and general tidying up of the cottage. As is to be expected when a charter member of the Bachelor's Club is found conducting operations of this sort, matrimony was the motive generally credited to Bob's activity. Bob, however, was unconcerned. He permitted the gang to think what they chose and then went to Los Angeles and the southern beaches and enjoyed his vacation.

Mark Webster and Crew, who Recently Completed the Installation of Three Additional Big 500 K. V. A. Transformers at the Midway Sub-station. From Left to Right: Hank Boison, G. T. Hamby, Paul Cox, Mark Webster, James Kaufman and H. H. Bell

Mark Webster and his crew have completed the installation of three 500 K. V. A. transformers at the Taft substation. With this increased capacity District Agent Jack Carter is in excellent shape to meet the rapidly increasing demand for power in his district.

Bob Laird enjoyed his vacation the latter part of last month and now that he has safely returned and is again on the job his friends in the office and throughout the field are breathing When he returned he came home alone, much to the chagrin of the office force, who had been hoping for a good excuse to celebrate at Bob's expense.

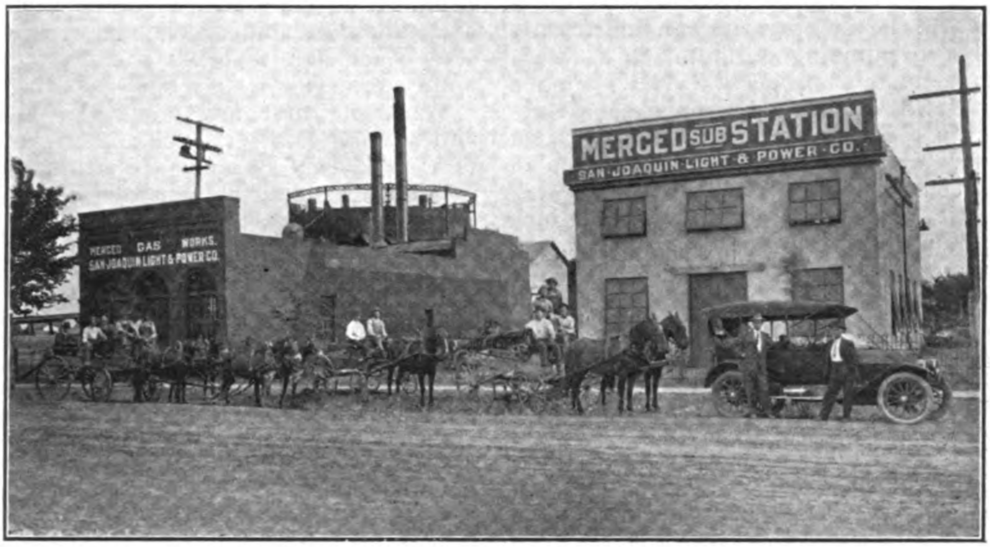
Louis Somers, the genial Westinghouse man, was in the field for a day or so recently while returning from his vacation spent in and around Los Angeles. He was accompanied by Willard C. Johnson, the local representative of the company, and after leaving Midway they continued to Fresno by automobile.

J. J. Mason, brother of D. P. Mason of the Fresno office, is filling the vacancy in the office made by the resignation of Herbert West, who was forced to give up his work on account of ill health.

Merced

Work has been going ahead at a lively rate in the Merced office for the past month as vacations are now at an end and all of the boys are back on the job after having well earned and appreciated rests.

District Agent Casad enjoyed his vacation in San Francisco and although he has been back at his desk for more than a month he has not yet thrown off the "south of Market" slang.



Gas Works and Sub-station at Merced with Crews ready for the Day's Work. At the Left is Ground Foreman S. H. Sales and His Crew in Four Mule Line Wagon. Gas Foreman N. G. Hanes and Gas Fitter J. C. Fountain in City Service Wagon. In the Machine in the Rear O. A. Kommers and M. Zook, Inside Wireman and Troubleman. Next Come Line Foreman Smart and His Crew, then R. Casad, District Agent, and Scott Hughes, Gas Maker

Harry Neumann, office clerk, spent his vacation on a trip to New York. The little village on the other side of the continent is the place that Harry proudly calls home and he took advantage of the time off to return to the family fireside for an enjoyable visit with his parents. It was a long trip for so short a time but to be back in little old "Noo York" again was certainly worth it, says Harry.

O. A. Kummers, who has been making his headquarters in the Merced district, has been assisting District Agent Casad in the office during the vacation period.

Mrs. R. H. Benjamin spent a most enjoyable month in San Francisco and is again back at home.

The Mt. Gaines mine, which is located about nine miles north of Hornitos in the Merced district, is one of the largest pieces of business obtained in the north end of the system in some time past. Although an old property, the mine has been taken over by new owners, who are preparing to operate it on an extensive scale. It is their intention to equip the property throughout with electricity and they at present have an installed capacity of 300 horsepower. There is a twenty stamp mill for handling the ore on the ground. District Agent Casad has made several trips to the mine recently in getting things in shape for its operation.

The boys in the Merced office have been enjoying a quiet little laugh at the expense of O. A. Kommers. While making a trip through the district recently Kommers ran into a sandy stretch of road near Ballico and before he knew it, he and his car were firmly stuck. The day was warm, in fact one of the hottest of the month, and distasteful as it was Kommers philocophically resigned himself to his fate and proceeded with the task of digging himself out. It was a big task, too, but after the best part of an hour's hard labor the machine was again on its way. Kommers, however, was unable to keep the incident a secret and he had much explaining to do for some time after.

Meter testers McKinley and Morse have gone over the district recently.

Archdeacon Emery, of San Francisco, who owns land near Atwater where he is operating an electrically driven pumping outfit, made a recent trip to his property. He is much pleased with the present sweet potato crop. His irrigation plant has just been improved by the construction of a cement reservoir which is a fine addition to the property. The three-inch pump is being driven by a three horsepower motor.

With the Street Car Boys

Conductor McMillan has returned from a tour of the northern part of the state, making the trip from Bakersfield by cattle train. He returned, however, in the drawing room of a Pullman. The trip was a decided novelty which he enjoyed thoroughly.

Conductor Stock was on the sick list the early part of the month, but he has entirely recovered and is now back on his regular run.

Conductor Hess has sent in his subscription to the Magazine. He is looking for a home site and he wants to get all of the information possible as to the best place to locate. He believes the Magazine will be of assistance to him.

Motorman James Moore has had a taste of bachelor's life this month, while his family was absent on a visit to friends in the Sacramento Valley. Jim is a good cook and he got along in fine shape.

Conductor L. Kast made a hurried trip to Madera during the month, having been called there by the serious illness of his sister, who is now well on the road to recovery.

Conductor Buckman is breaking in on the front end under the instructions of Motorman A. Anderson.

Master Mechanic Mickelberry is now rejoicing upon the return of his wife, son and daughter from Fresno where they were temporarily domiciled during the illness of the boy. He was compelled to submit to an operation, which was entirely successful, and all of the friends of the master mechanic are glad to hear of his son's recovery.

Night Foreman Ruggles took a night off recently in order to give a theatre party in honor of a number of visiting friends. Red believes in doing right everything he undertakes and it is a safe conclusion that the party was a huge success.

With the first few cool mornings and evenings Master Mechanic Mickelberry and Day Foreman Emerton set about to replace the windows in the open cars. These lads have always the safety and comfort of the traveling public in mind and they are quick to make the car changes as soon as the weather demands.

Motorman C. Nelson is negotiating for an up-to-date automobile and is trying to turn in on the trade his present mode of transportation which is a hay burner of the old standby horse and buggy type. The latter. vehicle is not speedy enough for his present requirements now that the hunting season is here. He wants to cover the ground quickly to and from the hunting grounds, as he knows it requires all the time he can spare to get the limit. Asa Clark is assisting him in his search for a machine.

First Orange Shipment

The season's first shipment of oranges to leave the San Joaquin Valley was made from Exeter by the Merriman Ranch October 8th. The oranges are consigned to Australia. Picking began September 29th, which is a new record for an early crop. Ten cars comprised the shipment, which went by rail to San Francisco where they were reloaded for the Antipodes.